OLD!

THE ESSENTIAL GUIDE TO CLASSIC GAMES

retro GAMER™

AMSTRAD | COMMODORE | SEGA | NINTENDO | ATARI | NEO GEO



PAC-LAND
DISCOVER WHAT HAPPENED WHEN PAC-MAN GREW ARMS AND LEGS

PLAYSTATION TOP 25
WILL YOUR FAVOURITES MAKE THE CUT?

WHEN ARCADES RULED THE WORLD

JACK THE NIPPER
BEHIND THE SCENES OF GAMING'S TERRIBLE TYKE

ALSO INSIDE
- INTELLIVISION
- FAIRLIGHT
- RONALD WAYNE
- CHUCKIE EGG
- COLECOVISION
- COMMANDER KEEN
- TIME CRISIS

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Digital Edition
GreatDigitalMags.com
ISSUE 127



THE RETROBATES

FAVOURITE ARCADE GAME



DARRAN JONES

It's clearly *Strider*. An amazing arcade experience with superb level design and amazing boss encounters throughout.
Expertise:
Juggling a beautiful wife, two gorgeous girls and an award-winning magazine
Currently playing:
OlliOlli
Favourite game of all time:
Strider



NICK THORPE

2 Spicy, an amazingly innovative versus lightgun shooter that flopped upon release. I often mourn its failure.
Expertise:
The accidental destruction of my own tanks while playing strategy games
Currently playing:
South Park: The Stick Of Truth
Favourite game of all time:
Sonic The Hedgehog



PAUL DRURY

I urge all readers to try the beautiful and bouncy *Jump Bug*, a charming oddity with a unique rhythm… plus it may actually have unwittingly invented the scrolling platformer with its pyramid level.
Expertise:
Cadging ten pence for one more go
Currently playing:
The Last Of Us: Left Behind
Favourite game of all time:
Sheep In Space



STEVE HOLMES

I used to bloody love *Silent Scope*, and I remember finding a version on a ferry to France that you could win money on. I felt like a hired gun.
Expertise:
Nanomachines
Currently playing:
Dark Souls II
Favourite game of all time:
The Legend Of Zelda: Ocarina Of Time



JONATHAN WELLS

Growing up in the Nineties I would say it has to be *Time Crisis*, and then I followed it onto the PlayStation two years later.
Expertise:
Tackling dirty nappies and retro spreads
Currently playing:
Lego Marvel Super Heroes
Favourite game of all time:
The Secret Of Monkey Island



DAVID CROOKES

Chase HQ but more because of my love of the CPC version which I played first.
Expertise:
Amstrad, Lynx, adventures, *Dizzy* and PlayStation (but is that retro? Debate!)
Currently playing:
Broken Sword 5: The Serpent's Curse
Favourite game of all time:
Too many to pick from



RICHARD BURTON

It would be the first videogame I ever played. Me and Dad sat around the *Phoenix* cocktail table in the The White Hart pub in St Keverne in 1980 nursing a lemonade and blasting motherships. Happy days.
Expertise:
Stuff and nonsense
Currently playing:
Space Harrier
Favourite game of all time:
Manic Miner



PAUL DAVIES

Though I became obsessed with *Ghouls 'N' Ghosts* after the Mega Drive version, my first 'true love' was *Pac-Man*.
Expertise:
Coming second
Currently playing:
Bravely Default
Favourite game of all time:
Ghouls 'N Ghosts



JASON KELK

Gradius would have to be my favourite of all time. I play it every now and then and would love a coin-op!
Expertise:
Making things up on the fly
Currently playing:
GWNN (C16)
Favourite game of all time:
Io

LOADING...

As you may have guessed from our awesome Army Of Trolls cover we have a fantastic arcade feature for you this month. Growing up in the town of Poole, I was lucky to have access to a large number of arcades, spending most of my time at Poole Quay Amusements. Holidays were just as good, as two weeks in Porthcawl delivered a stretch of beach that was bustling with every arcade game you could image, from *Pac-Man* to *Strider*.

This month we've decided to revisit that magical time when arcades literally ruled the gaming scene. We speak to key developers across three decades and explain why arcades were such a magical place to visit and how they influenced the industry for many, many years. You went to arcades because they offered you an experience you simply couldn't get in the home, and as technology improved it was always the latest arcade machines that were leading the way.

Eventually home gaming caught up and finally surpassed the arcade experience, but for many gamers – particularly those on forums such as JAMMA+ – the arcade machines of the golden era remain king.

Enjoy the magazine,



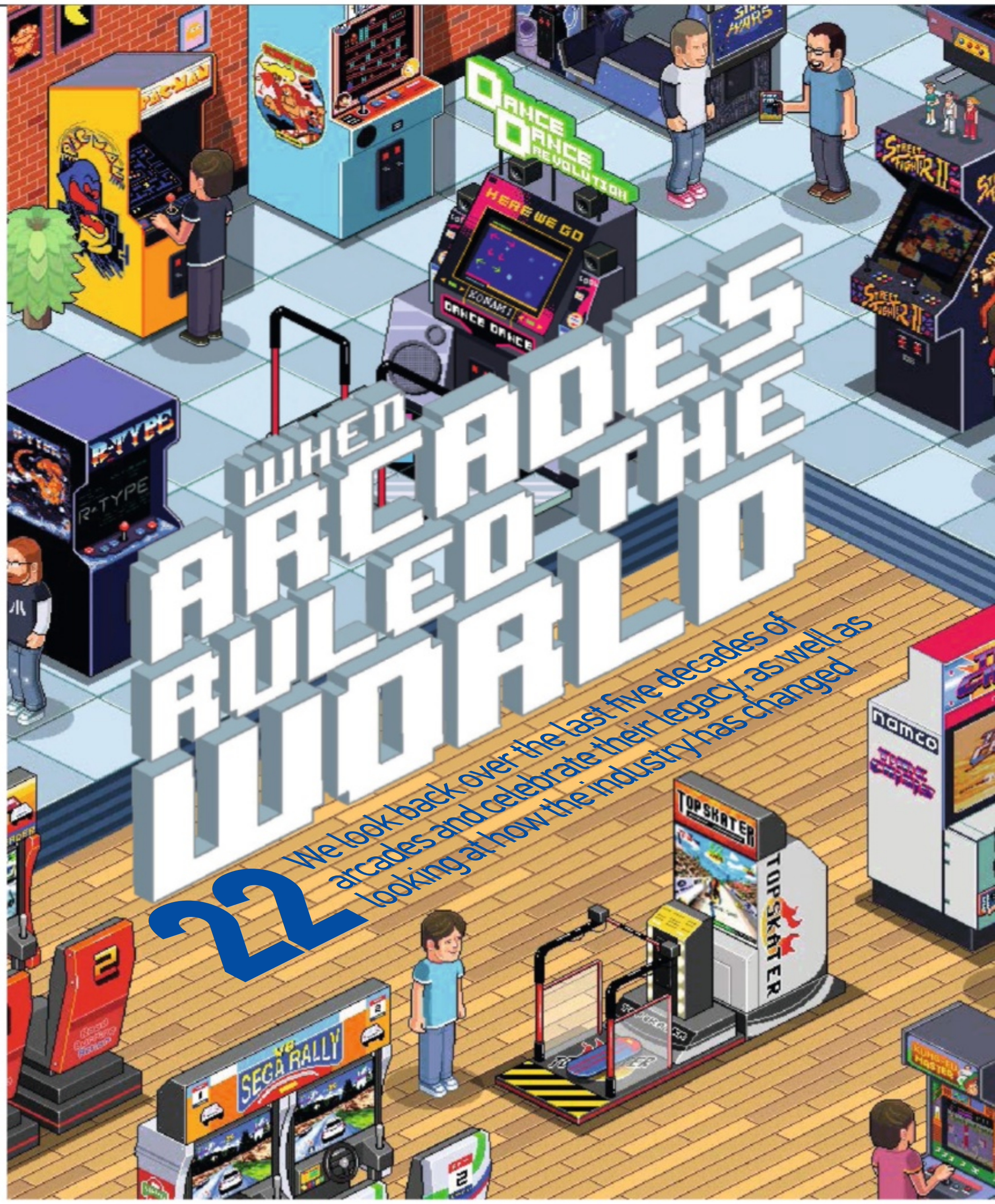


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>> Load 127 Breathing new life into classic games

FEATURED





RETRO REVIVALS

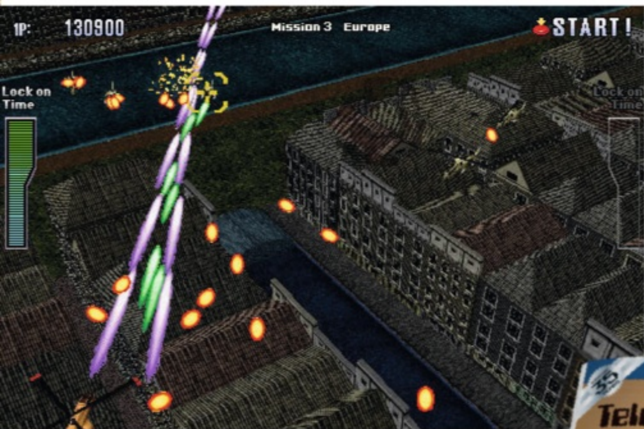


In the hot seat this month…





"Toaplan's games retain a passionate following" Nick Thorpe



retro GAMER.net READER'S REVIVAL

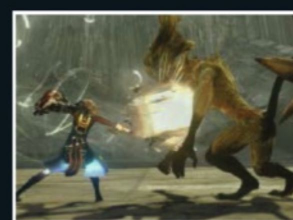


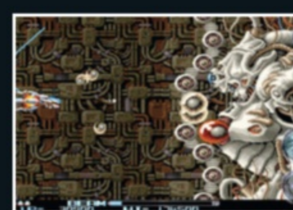


ESSENTIALS

RETRO RATED







retro radar

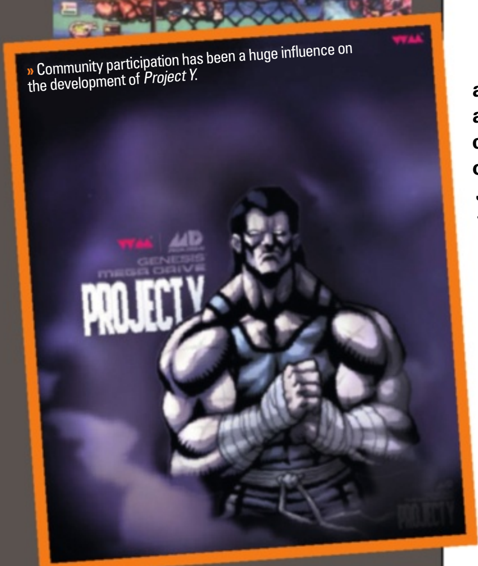
GIVE US TWO MINUTES AND WE'LL GIVE YOU THE RETRO WORLD



>> The news has certainly been unusual this month, with a brand new Mega Drive game emerging and the announcement of a movie about the 16-bit console wars

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» Community participation has been a huge influence on the development of *Project Y*.



A NEW CHALLENGER APPROACHES

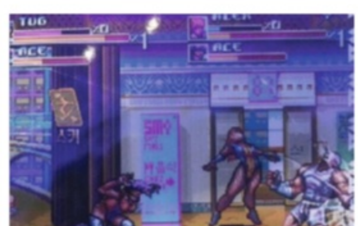
WE LEARN HOW WATERMELON AIMS TO MAKE ITS MARK ON THE MEGA DRIVE BEAT-'EM-UP SCENE

The first images of Watermelon's forthcoming scrolling fighter, with the working title *Project Y*, have appeared online – and they show a game that's looking to take the crown from the long-standing king of Mega Drive scrolling fighters, *Streets Of Rage*. What's more, it's taking the game on very directly. Showing off the game's graphical prowess, the team has released sprites which show the evolution of design work on the three main characters, comparing them to sprites of *Streets Of Rage 2* – they're all bigger, as you can see – and teasing a gargantuan enemy. The screenshots that have surfaced so far feature detailed backgrounds and impressively large sprites, and further show the abundant *Streets Of Rage* inspirations.

Speaking to Tulio Adriano of Watermelon, we learned a bit more about how the game is going to play. Speaking about the inspirations for the game, Tulio said "I wouldn't risk saying anything besides *Streets Of Rage* and *Final Fight*. With that said, there's a lot of cool Capcom beat-'em-ups from the Nineties with lots of cool stuff going on, and that certainly provides some inspiration as well." However, the game is aiming to be more than a simple tribute act, and Watermelon aims to take the game to the next level by providing a new take on the genre: "Gwénaël [Godde, game designer] coined the term 'RPB' for 'Role Playing Beat-'em-up'. We did a lot in order to maximise the



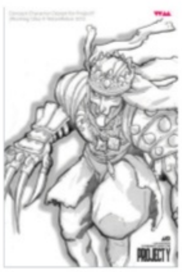
» [Mega Drive] The leaked early images are looking promising, with hugely detailed backgrounds.



» [Mega Drive] Watermelon is being coy about releasing images, with only these leaked pictures available.







replay value of the game, so it's probably noteworthy that every [playthrough] can have a different experience depending on what you do as you play."

The game also aims to surpass the old master by stretching Sega's 16-bit hardware to its limits. Watermelon has a precedent for this, in the form of its previous Mega Drive project *Pier Solar And The Great Architects*. The RPG enjoyed a lengthy development period, eventually arriving in 2010 after six years of work. The game was particularly ambitious on a technical level, utilising an enormous 64-megabit cartridge, larger than any title released during the console's active lifespan. It also featured an enhanced soundtrack CD for Mega-CD owners, allowing them to replace the cartridge music with full CD audio during gameplay. We gave it a score of 84 per cent when we reviewed it in issue 90, describing it as "a remarkable game that any RPG fan would be proud to have in their collection."

Tulio kept his cards close to his chest when asked if any similar special technical features were planned for *Project Y*, but is confident that the team has surpassed its previous achievements. "It's a bit early to go into technical details but all that I can reveal for now is this: considering the features that we achieved with *Pier Solar*, we set the bar pretty high already. After many months of brainstorming and experimenting trying to figure out how to best it, we believe that we did it."

Given the team's impressive technical achievements with *Pier Solar*, the Mega Drive might seem like a natural choice for the team's second original project. But while the team enjoys working with the hardware, Tulio is quick to remind us of the other unique factor behind *Project Y*'s development: "There's something about the Mega Drive, I just can't explain… making games for it is incredibly challenging yet very rewarding. And one thing that we can't dismiss is the fact that our community asks for it. In the case of *Project Y*, when we booted up the project the platform was undefined. It was chosen by the people."

Community participation has been a huge influence on the development of *Project Y*, thanks to Watermelon's Magical Game Factory. Sidestepping other crowd-funding platforms, the website allows users to invest in new developments in exchange for direct influence over the direction they take. *Project Y* began as a totally blank canvas, with the game's format, genre and setting all decided in polls on the site. Additional polls gave users a say on specific details such as character size, the inclusion of blood and the range of weaponry available. It's an innovative approach – by soliciting feedback prior to release, Watermelon is hoping to produce a game that will have maximum audience appeal.

At present Tulio is concentrating on the release of *Pier Solar HD*, which is coming to a variety of modern platforms beginning with the Wii U, following a successful Kickstarter in 2012. *Project Y* is the next closest to completion at Watermelon, and is currently being worked on by Gwénaël alongside *Project N*, a SNES RPG. But with a playable preview event held for investors in Paris earlier this year, the game is evidently moving toward completion at pace. In the meantime, we can only speculate as to whether *Project Y*'s technical advantages and fan feedback can help it take the beat-'em-up throne from *Streets Of Rage*. ✱

> **"There's a lot of cool Capcom beat-'em-ups from the Nineties"**
> Tulio Adriano

THE RETRO DEBATE

>> Readers react to the initial screenshots

VISIT **RETROGAMER.NET/FORUM** TO HAVE YOUR SAY

"It's hard to know if they're real, they look more like a Neo Geo game!" Matteus

"Looks like a Streets Of Rage 2 re-skin" DPrinny

"I seriously can't wait for this, can't remember the last time I was this excited about a game" The Laird

"I think if it's even half the game Streets Of Rage 2 is then it should be great. And as long as it's not as repetitive as Beats Of Rage" psj3809



» Character sprites have evolved significantly over the course of *Project Y*'s development

Extra Lives

>> Recent high profile releases for retro platforms

NIGHTMARE BUSTERS SNES

■ Originally planned for release by Nichibutsu in 1995, the game failed to materialise. While *Nightmare Busters* first saw release as a mobile game under the name *Flynn's Adventure* in 2004, the SNES original was finally made available in cartridge form by Super Fighter Team late in 2013.



STURMWIND DREAMCAST

■ 16 years after beginning development on the Atari Jaguar as *Native*, shoot-'em-up *Sturmwind* finally arrived as a Dreamcast release in 2013. Developer Duranik managed to coax some stunning visuals from the Dreamcast, thanks to some excellent use of pre-rendered sprites. Critical reception was positive.



PUTTY SQUAD AMIGA

■ System 3 released the Amiga community's most wanted lost game as a free download at the end of 2013, ending nearly two decades of waiting. *Putty Squad* missed its planned release in 1994 after receiving great reviews from a number of magazines. We told the story of how the game became available in issue 125.



NEO XYX NEO GEO

■ This shoot-'em-up from the prolific NG:DEV.TEAM is the first Neo Geo game that requires a vertically oriented monitor, and arrived on cartridge late in 2013 – as ever, a strictly limited edition release. As is standard for the team's releases, a Dreamcast edition is on the way in 2014, providing a more affordable option for players.

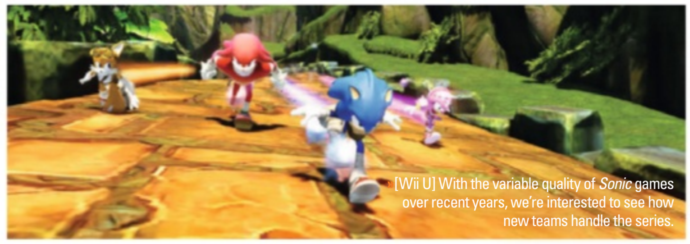


SOULLESS COMMODORE 64

■ Released in 2012, this massive platform adventure is a very high quality release which could easily have become a smash hit in the system's Eighties heyday. While the game saw release across tape, disk and even cartridge formats, frugal players will be pleased to know that the game is now available online for free.






[Wii U] With the variable quality of *Sonic* games over recent years, we're interested to see how new teams handle the series.

SONIC GOES WEST

RETURN OF THE HEDGEHOG

Sega has announced a bold new approach to its classic *Sonic The Hedgehog* series, *Sonic Boom*. Aimed at engaging Western audiences, the latest branch of the series is trying a variety of new ideas across games and TV. Chief amongst the features are the revamped character designs, which boast the liberal application of athletic tape and – in Knuckles' case – some rather obvious use of performance enhancing substances.

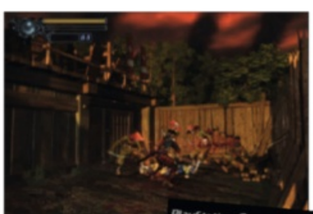
The games are the final titles to be released under Sega's three-game exclusivity deal with Nintendo, and are being developed by Western studios. The 3DS version of *Sonic Boom* hasn't yet been sighted but is being handled by Sanzaru Games, which was most recently behind *Sly Cooper: Thieves In Time*.

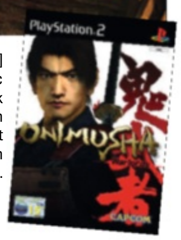
The Wii U version is being handled by Big Red Button Entertainment, a studio founded in 2009 that includes former staff from developers such as Naughty Dog, Heavy Iron and High Impact Games. The game appears to retain the sense of speed that has come to define the series, but includes new elements such as the Enerbeam tether mechanic. Sega is touting combat and exploration as *Sonic Boom*'s key features, alongside a multiplayer component – up to four players can play the game cooperatively. Interestingly, the team at Big Red Button includes senior game designer Chris Senn, who has had a brush with Sonic before thanks to his work on the aborted Sega Saturn project *Sonic Xtreme* nearly two decades ago.

Sonic Boom also brings Sonic back to TV screens for the fifth time, this time in a CGI animated series. Featuring comedy plotlines a million miles away from the games such as Knuckles running for mayor and Eggman faking an injury in order to take Sonic to court, it's squarely aimed at the pre-teen market.

ONIMUSHA COMPOSER ADMITS 18-YEAR FRAUD

Mamoru Samuragochi, a Japanese composer credited for work in games including *Resident Evil: Director's Cut* and *Onimusha*, has admitted that he paid another composer to write the majority of his work since 1996. Samuragochi had achieved fame for his Hiroshima symphony, which was purportedly an expression of his feelings on the atomic bombing of the city in 1945, and had been compared to Beethoven for continuing to compose despite becoming deaf. The work credited to Samuragochi has since been revealed to be the work of Takashi Niigaki, a lecturer at the Toho Gakuen School Of Music.

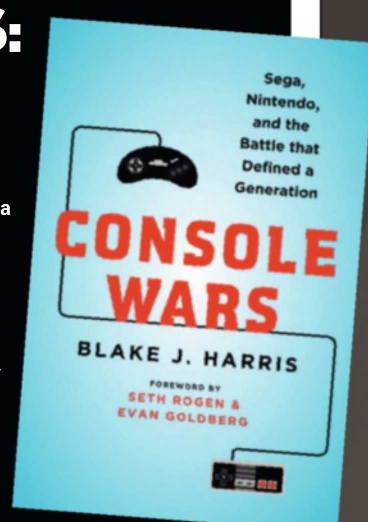




»[PlayStation 2] A fantastic orchestral soundtrack accompanies the action in *Onimusha*, but it's not the work of the man in the credits.

CONSOLE WARS: THE MOVIE

Sony Pictures has picked up the movie rights to *Console Wars*, an upcoming book by Blake J Harris that chronicles the fierce Nineties battle between Sega and Nintendo. The film has been pitched as a business thriller to be written and directed by Seth Rogen and Evan Goldberg, a duo perhaps most famous for their work on the 2007 comedy *Superbad*. Producer Scott Rudin is known for his work in the genre in recent years, having worked on both *The Social Network*, a film about the founding of Facebook, and *Moneyball*, the true story of the how the cash-strapped Oakland Athletics built a winning baseball team.



YOUR GUIDE TO OUR BRAND NEW WEBSITE

LEARN HOW YOU CAN BE A CRITICAL PART OF OUR EXCITING NEW WEBSITE

After a lot of hard work, we're delighted to announce that we have a brand new website for you all to enjoy.

We realise that many of you enjoyed our original website, so we have worked hard to ensure that any classic game profiles you may have written have carried across to the new website. This means that there's already a wealth of content to enjoy, but it will continue to expand as we add more classic **Retro Gamer** articles to it.

Of course, the real beauty of the **Retro Gamer** website is that it's also created especially for you, so you have a large amount of interactivity that enables you upload new game profiles, show off your precious gaming collections and tells us what you love about gaming in general.

Prizes will be given out to the best profiles and the best pieces will also appear in the magazine, so don't delay and head on over to **www.retrogamer.net**



GAME PROFILES

1 This is where you are able to browse our extensive games database and add your own choices with our easy-to-follow instructions.

RG PICKS

2 Here you can look at Future Classics, view the videos we post up or simply add profiles on your favourite retro related items. If you love them let us know.

RETROBATES

3 Proud of your collection? Got a rare game you want to show off to the world? Then share it online and join our growing pool of fellow retrobates.

CLASSIC CONTENT

4 We're aware that not all our readers have been with us from the beginning so you'll be able to read classic abridged content online.

THEMES

5 Decorate the website with a unique gaming theme. So far we have ZX Spectrum, PC-DOS and Commodore 64, but we'd love to hear more suggestions.

JOIN IN

6 There are numerous ways in which you can interact with the site, whether its visiting our busy forum or simply adding your own game profiles and 'Why I love' profiles.

THE VAULT

THE COOL RETRO STUFF THAT WE'VE HAD OUR EYE ON THIS MONTH

PICK OF THE MONTH



Atari Flashback 4

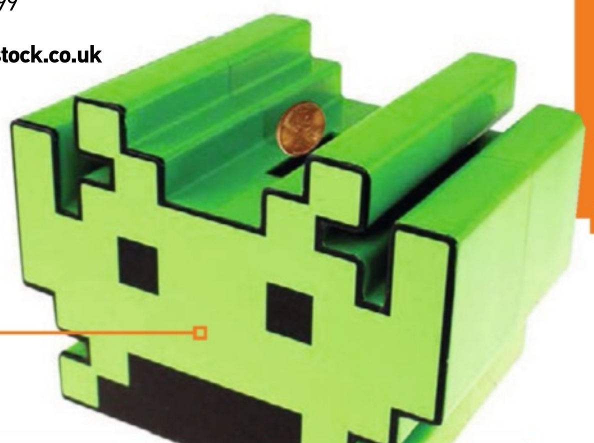
If you're looking for an antidote to the complexities of the new consoles on the market, the Atari Flashback 4 might well be up your alley. The fourth iteration of this plug-and-play console allows you to replay some of the Atari 2600's greatest hits, without having to go hunting for old hardware at car boot sales. The console comes with two controllers, which for the first time in the Atari Flashback range are wireless, and includes 75 built-in games featuring favourites such as *Breakout*, *Yars' Revenge*, *Centipede*, *Asteroids* and *Space Invaders*.

Price: £49.99 **From:** **www.funstock.co.uk**

Space Invaders Money Box

If you didn't put enough coins into *Space Invaders* cabinets as a youth, this money box will happily eat more of your change. Inserting coins produces *Space Invaders* sound effects, providing you with an incentive to shift the coppers from your pockets whenever you arrive at home. Just be sure to empty it every so often – preferably into a penny falls machine at a seaside arcade, for added nostalgic value.

Price: £13.99
From: **www.funstock.co.uk**



Mario Kart K'nex

Minecraft might have replaced construction toys for a lot of people, but we're still big fans of actually building things – and the *Mario Kart* bikes are a fun thing to build, for both the young and the young at heart. A variety of classic characters are available, from the world's most famous plumber to Yoshi and Bowser, but the best thing is that the kit doesn't include any blue shells.

Price: £7.99
From: **www.amazon.co.uk**





Pac-Man Plush

It's easy to underestimate Pac-Man's appeal as a cute character given that he's such a simple design, but seeing him in plush form quickly overwhelms any doubts with fuzzy goodness. Namco's enduring mascot comes in a variety of sizes and, with a little squeeze, makes the instantly recognisable sounds from the arcade game.

Price: £8.99
From: **www.amazon.co.uk**

> **"The best thing is that the kit doesn't include any blue shells"**

NES USB Controller

If you love emulating the NES but don't have the oddly shaped hands that make the original controller comfortable, you might want this USB replica of the 'dog bone' controller that came with the top-loading NES-101 console – especially as it's compatible with both PC and Mac. The rounded edges of the SNES-era design are combined with the simplicity of the NES control scheme to provide a little joy for Nintendo enthusiasts everywhere.

Price: £16.99
From: **www.funstock.co.uk**



Retro Gamer Coasters

Erase annoying drink rings and get a blast of nostalgia at the same time with our awesome coasters. Available in packs of four, this tough durable coasters feature some of the best **Retro Gamer** covers we've ever produced, making them perfect for the loved ones in your life.

Price: £4.99
From: **www.imagineshop.co.uk**



Here's my bio…
In 1992 I started out on *Mean Machines Sega* and *Nintendo Magazine System*. In 1995 I became editor of *C&VG*. I led the *C&VG* website from 1998 until Christmas 2000, then I left journalism to be concept design manager at Criterion Games. I returned to journalism in 2002 and from 2005 I've been running my own company, Unlikely Hero.

Hello, retro gamers. My name is **Paul Davies**. I used to be the editor of C&VG and have also worked on a number of classic gaming magazines over the years



"Give us your next man… or else"

Like countless episodes of my life ever since, my first run-in with a videogame had potential to be monumental but was sort of… I dunno. My local Tesco had *Space Invaders* (a proper cabinet too, with the iconic Taito artwork on its side-panels), spotted by my close friend who was *very* excited.

We would've been nine years old, but my mate regularly got 'spends' from his folks for doing household chores and running errands. My first proper go on *Space Invaders* was one of his hard-earned lives. I don't remember thinking too much of it at the time, it was just another cool thing – like Super Balls.

Before coin-ops replaced fruit machines in venues great and small, you'd find them in all kinds of weird places. The ABC cinema in Rochdale had *Moon Cresta*. The Tasty Bite café had a selection crammed into a pitch-black alcove, starting with *Donkey Kong* in the early days and moving on to *Road Runner* and *Dragon's Lair*. Whoever owned that place was a terrific talent scout. *Street Fighter II* was the last game I remember seeing in there before I left town.

> "It was a rebellion, wasting your parents' shrapnel on something short-lived"

Of course by the early Eighties, dedicated venues had sprung up on high streets and in city centres. Again, close to home, a bare-bones shop space that I frequented had all the essentials. An empty room otherwise, with absolutely no decoration other than a small taxi-rank style change window at the back.

Space Invaders Part II took root in the far corner here for many seasons, overseeing a succession of new cabinets throbbing with bass notes and flashing abstract imagery to entice mostly younger kids who'd somehow acquired a pocketful of change. *Carnival*, *Gorf*, *Defender*, *Missile Command*, *OutRun* and *Rambo* were local celebrities. The arrival of *Shinobi* and soon after that *Splatter House* was like the Gallagher brothers had popped by to meet and greet, demanding all our lunch money.

It was a very minor rebellion, wasting your parents' shrapnel on something short-lived and selfish. But as a lad in the Eighties, this was a rite of passage: boys versus machines. Standing before the Dust Dragon in Capcom's *Forgotten Worlds* in 1989, I thought I would never pass this trial by fire. I was shocked at how much money city workers in Manchester would pour into that dreaded cabinet – continue after continue to shred flesh off a creature before blasting its heart.

The business of enjoying the arcade experience had become daunting. With *Pac-Man* and *Space Invaders*, even something fancy like *Battlezone*, you could enjoy the same basic thrill as a good player, but not last nearly as long. The likes of *Ghouls 'N' Ghosts*, *R-Type*, *Super Monaco GP* and even *TMNT* presented journeys to endure fuelled by 20p pieces (or 50p for three lives if you were lucky).

My proudest moment was kind of cheating. I managed to 'clock' *Ghouls 'N' Ghosts* twice on one credit in a massive parlour on the outskirts of Manchester's Piccadilly Gardens. I'd been playing the game relentlessly on Mega Drive, so knew all the patterns better than anything in my life… ever.

While I am the cat that got a lifetime supply of cream now that consoles deliver worlds beyond a JAMMA board's filthiest dreams, a part of me sorely misses the arcade hang-out.



retrodiary

28 March – 19 April

>> A month of retro events both past and present



28 March 1980
■ Midway's *Space Invaders II* is released into arcades… but only in the US of A and only in cocktail table cabinet form.



28 March 1995
■ The Apple Bandai Pippin, a multimedia gaming system goes on sale to complete apathy. 42,000 units later it was discontinued…



28 March 2003
■ Nintendo releases its compact flip-top Game Boy Advance SP in the UK.

28 March 2007
■ Rare releases an updated version of its first computer game. *Jetpac Refuelled* plays well but is only available on Xbox Live.





31 March 2014
■ Yacht Club Games's platformer *Shovel Knight* is due for release on Nintendo 3DS and Wii U.



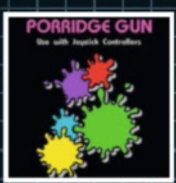
31 March 2006
■ *OutRun 2006: Coast To Coast* is released by Sega on the PS2 and Xbox in Europe.



31 March 1995
■ *Double Dragon* arrives on the Neo Geo AES console.



28 March 2014
■ *Professor Layton Vs Phoenix Wright: Ace Attorney*, a crossover puzzle game, is expected to be released in the UK on Nintendo 3DS.



1 April 1981
■ *Porridge Gun* squirts its way onto the Atari 2600 as part of an American retailer's promotional store exclusive.



2 April 1984
■ Software Projects releases *Jet Set Willy* on the Spectrum. Bug-ridden it may be but an all-time classic is born.



7 April 1986
■ One of Ultimate Play The Game's most testing games, the tricky *Cyberun*, is released on the Spectrum and later the MSX. The advertised Amstrad version never appeared.



7 April 2006
■ *Tomb Raider Legend* is released on Xbox and PlayStation 2.



13 April 1990
■ Asmik Entertainment publishes Sega's *Power Drift* racing game on the PC-Engine.



11 April 1985
■ The first issue of Newsfield Ltd's monthly Commodore 64 magazine, *Zzap!64*, goes on sale.



8 April 2005
■ From id Software and published by Activision, first-person shooter action arrives with *Doom 3* on PC.



8 April 2001
■ *Dr Mario 64*, a tile matching puzzle game, is released on the Nintendo 64 exclusively in America.



13 April 2001
■ *Tribes 2*, a multiplayer science fiction based first-person shooter by Dynamix, is released on PC.



14 April 2014
■ Square Enix's *Final Fantasy* franchise is set to continue with *Final Fantasy XIV: A Realm Reborn* on PlayStation 4.



19 April 1982
■ Namco releases its classic *Dig Dug* in the arcades.



24 April 2014
■ New issue of **Retro Gamer** hits the streets.


12
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BACK TO THE EIGHTIES



» [Arcade] Ironically *Radar Scope* fell off almost every arcade proprietor's radar but was saved by *Donkey Kong*.

THE LATEST NEWS FROM NOVEMBER 1980

NOVEMBER 1980 – Intellivision officially launches, everyone digs Space Panic, the beginning of The End, Radar Scope tries and fails, Space Beam and Panther arrive and Battlezone blasts into arcades. Richard Burton drives to the erupting volcano…

After a successful test marketing spell in California during 1979, Mattel Electronics decided this month to launch its brand new games console nationwide. It was intelligent, it was television (sort of) – it was the pioneering Intellivision.

Costing $299, $100 more than an Atari 2600, the Intellivision came with the less than inspiring *Las Vegas Poker & Blackjack* cartridge. However, Mattel's Intellivision could claim several home gaming firsts. It was the first 16-bit processor driven console and it was also the first system to have downloadable games via cable television.

Another first was its multi-directional controller. The keypad design with a 16-directional pad and buttons on the sides was unique, but was also rather cumbersome to use. A shame, as the console itself was a wonderful system and one that could perhaps tackle Atari 2600's dominance of the market.

A few games were already available as part of the test marketing period such as *Armour Battle*, *Auto Racing* and *Space Battle* but all did very little to show the Intellivision at its best. 1980 brought a variety of mediocre sporting games such as *NASL Soccer*, *Tennis* and *Boxing*. *Skiing*, *Bowling* and *Horse Racing* were much better and good fun. One of the few sports games to be released for the machine was *Sea Battle*, a terrific two-player game of strategy.

Released on 26 November into arcades was Atari's vector graphic favourite *Battlezone*. This classic first-person wire-framed graphic shoot-'em-up immediately caught the attention of gamers with its innovative graphics being the first instance of a 3D environmental landscape featuring in a game. Although the graphics were black and white, a colour overlay on the CRT screen gave *Battlezone* its lovely familiar green hue. The periscope viewfinder which you watch the action through was also a great touch making the immersive quality of the game something unique to arcades and giving it an almost virtual reality feel.

Also new in arcades this month was the dig-'em-up *Space Panic* from Universal which is often touted as being the first ever platform game. You were a spaceman trapped beneath the surface of a planet in caverns consisting of platforms, ladders and aliens. You had to dispose of them by digging a hole, luring them in and roundly slapping them on the head with your spade. Brutal but necessary, as your means of escape was hampered severely by not actually being able to jump.

The levels got progressively difficult with the aliens reacting faster and there was also the spectre of a limited oxygen supply to contend with. *Space Panic* was a big hit for Universal and spawned endless clones on home systems ranging from the Apple II to the Dragon 32.

There was yet more new coin-op action with three new releases all fairly similar in genre. First off was *The End* by Konami. In what looked at first glance a fairly generic run-of-the-mill *Space Invaders* clone was something with a spot of originality.

You had to destroy the insect-like aliens that had a common goal: to steal the bricks you were guarding and to spell out "The End" at the top of the screen. It was an interesting twist on a very common theme that



» [Arcade] Played like *Space Invaders II* with simultaneous alien/opponent blasting. Simple but fun.





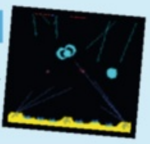
» Mattel's Intellivision console was released after a successful trial period enjoying strong sales.

CHARTS

NOVEMBER 1980

ARCADE

1 Missile Command (Atari)
2 Asteroids (Atari)
3 Galaxian (Midway)
4 Space Invaders Part II (Midway)
5 Space Invaders (Midway)





» [Arcade] *The End* was quirky and fun, featuring kleptomaniac space invader builders with a message to create.

THIS MONTH IN...

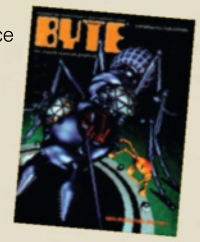
COMPUTER AGE

Computer Age investigated the world of speech synthesis and generation in computers and gaming, although at this point it was fairly limited to tabletop chess machines and Speak & Spell. It did find a television by Toshiba that allowed you to change channels and control volume with your voice. Smart TVs in 1980. Nice.



BYTE

Byte featured the MicroAce this month, an American ZX80 clone that was an exact copy of Sinclair's machine and yours for just $149. Sinclair promptly sued MicroAce and won, but hugs and handshakes followed as the two arranged a licensing agreement to sell ZX81s… but only in America and only in kit form.



80 MICROCOMPUTING

The magazine took a look at *Interlude: The Ultimate Experience*, a 'game' for the TRS-80 that purported to be "the most stimulating computer game ever conceived". Comprising of an interview, the program would select a fantasy scenario to enhance your love life. Much frantic joystick waggling followed.



worked very well. The insect aliens were colourful with smooth animation, the sound was pleasant and the gameplay nicely balanced. *The End* was a lovely coin-op that sadly appears to have faded into arcade anonymity.

Nintendo released a coin-op this month with its fixed shooter *Radar Scope*, which could be best described as *Space Invaders* and *Galaxian* on an angled perspective. Your task was to shoot the Gamma Raiders before they attacked your unseen spaceport, indicated by a damage bar. It was a testing game, particularly on later levels when the Gamma Raiders would attack in packs.

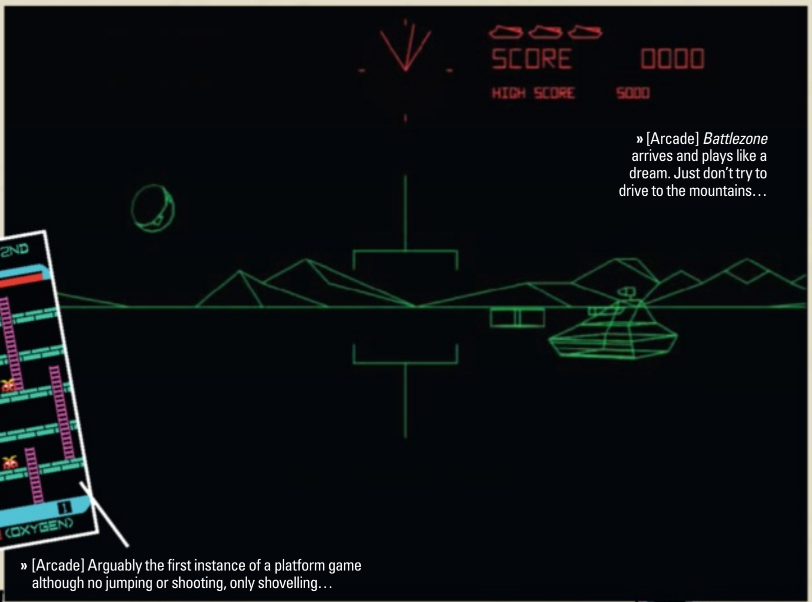
It was quite successful in Japan but failed to pique the interest of Western gamers. Nintendo of America had ordered 3,000 units of *Radar Scope* but it flopped so badly that a new game was ordered to be installed in the unsold *Radar Scope* cabinets. Shigeru Miyamoto was called in to fix the game but rather than trying to tweak it for American gamers, he designed a brand new title. With that *Donkey Kong* was born and installed in 2,000 of the cabinets.

Another new shooter was *Space Beam* by Irem Corp. It was similar in style to the recently released *Space Invaders II*, with opposing players or a computer opponent playing at opposite ends of the screen while simultaneously trying to blast the screen full of invaders. As the invaders were picked off, the opportunity to shoot your opposite number became easier and more tempting.

Irem Corp also had a coin-op game called *Panther* to release. It was a shoot-'em-up that saw you destroying tanks as they crawled down the screen toward you. They wanted to destroy the cities you were protecting similarly to *Missile Command*, and would do just that if they reached the bottom of the screen. Your tank fired upon these approaching enemies, but not only did you have to shoot in the right direction but gauge distance too with the aid of your gear stick/fire button combo controller.

It all sounds fairly exciting but it wasn't. The graphics were awful with a horrid colour palette and flickery sprites. Shooting a tank required more luck than judgement and the whole game was instantly forgettable.

It barely registered an interest in coin-op land, although Irem thought it was good enough to be ported to the MSX five years later with some minor enhancements – but it was still a load of old guff. Proof if there ever was that you can't polish a turd but you can sprinkle glitter on it. *



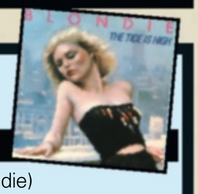
» [Arcade] *Battlezone* arrives and plays like a dream. Just don't try to drive to the mountains…



» [Arcade] Arguably the first instance of a platform game although no jumping or shooting, only shovelling…







TANDY TRS-80

1 Hellfire Warrior (Automated Simulations)
2 Temple Of Apshai (Automated Simulations)
3 Super Nova (Big Five Software)
4 Planet Miners (Avalon Hill)
5 Project Omega (Adventure International)

ATARI 2600

1 Championship Soccer (Atari)
2 Superman (Atari)
3 Canyon Bomber (Atari)
4 Circus Atari (Atari)
5 Sky Diver (Atari)

MUSIC

1 The Tide Is High (Blondie)
2 Super Trouper (Abba)
3 Woman In Love (Barbara Streisand)
4 I Could Be So Good For You (Dennis Waterman)
5 Fashion (David Bowie)

NOVEMBER WORLD NEWS

4 November saw the presidential election contest between President Jimmy Carter and the Governor of California and former Hollywood actor, Ronald Reagan. Reagan won the contest with a huge landslide victory.

20 November saw the end of the primary mission of the Voyager 1 with its encounter with Saturn. It flew through the cloud tops of Saturn and passed within tens of thousands of kilometres of Saturn's moons, taking some jaw-droppingly beautiful pictures along the way. After the fly-by of Saturn on 12 November, Voyager 1 began its next phase of exploration with its Extended Program. It's still out there now, approximately 12 billion miles away…

21 November saw the answer to the question fans of the television programme *Dallas* had been waiting for – 'who shot JR?' Fans would finally find out which character had shot JR Ewing and whether he was alive or dead.

This soap opera cliffhanger had inexplicably created a wave of mania across the globe with *Dallas* becoming a worldwide phenomenon off the back of it. When the episode entitled *Who Done It* aired revealing all, over 90 million American viewers tuned in. Apparently it was Kristin Shepard… While that may not get anyone excited today, the *Dallas*-styled end of season cliffhanger became commonplace in many US series due to the hysteria it created.

22 November saw the death of American actress and singer Mae West, aged 87. West often courted controversy for her use of saucy double entendres.

BACK TO THE NINETIES





» [Sega Saturn] Your first encounter with a zombie in *Resident Evil* is memorable.

THE LATEST NEWS FROM FEBRUARY 1997

FEBRUARY 1997 An old favourite made a return to arcades this month with the release of Arkanoid Returns. While not offering anything new in gameplay terms, it did have 50 new levels. Disappointment followed news it wouldn't be released outside of Japan…



Capcom had the heavyweight coin-op release of the month with *Street Fighter III: New Generation*. As the name suggests, the entire roster of characters changed except for the two regulars of Ken and Ryu. Additional tweaks to the format included Super Arts, a special move that could only be instigated once you had filled the Super Arts gauge. This occurred during normal play when attacks and special moves were used, filling the power bar. Once full, you could let rip with your own special move.

Graphically it was luxurious with crisply defined characters that were a little larger than in previous games. They were smoothly animated against lovely backdrops and with a whole new range of new characters to choose from *Street Fighter III: New Generation* promised big things.

On home systems and ready for release for PlayStation was *Contra: Legacy Of War* by Konami. Ten years after the original *Contra* game had been released, with several other *Contra* games interspersed along the way, Konami decided to change the perspective and graphics for the new PlayStation rendition, plumping for 3D graphics in an overhead view. While this sounded like progress, gamers were less enthusiastic about their run-and-gun franchise being tampered with.

The new perspective made ordinary tasks like jumping awkward and cumbersome to the point of detracting from the game. The 3D element was taken one step further with the gimmick of making them true 3D with the aid of a pair of cardboard stereoscopic glasses. The effect was okay but added nothing to the game, with those yearning for some proper *Contra* gaming action returned to their Mega Drives or Super Nintendos.

Sega Saturn owners were shaking with excitement (or possibly fear) with news that Capcom was releasing its survival horror favourite *Resident Evil* within months. It did issue the caveat that this was liable to change as it was also hurriedly working on *Resident Evil 2* for the PlayStation and a new Director's Cut of the original.

The Saturn port would introduce Jill Valentine and Chris Redfield, two members of STARS (Special Tactics And Rescue Service) who were challenged with entering a creepy zombie-infested mansion to investigate the disappearance of fellow STARS members. Much zombie slaying, exploration and puzzle solving followed with your performance and decisions leading toward one of several endings.

An additional mini-game feature for the Saturn port was the Battle Mode which saw you take on rooms of zombies with limited time and ammo, with your performance scored accordingly at the end.

Also promised for the Saturn was a conversion of another PlayStation horror survival game with added kung-fu fighting, *Perfect Weapon*. All sounds great…

Sadly, it was far from great. The PlayStation version was slated for being rubbish in just about every possible aspect. Its graphics were poor, the cut-scenes were not only awful but intrusive as they ruined the flow of the gameplay at the most inopportune moments and just trying to make your character move where you wanted it to was frustrating to the point where anger management classes should be considered. *Perfect Weapon* was scary for all the wrong reasons.

So, would the Saturn port fare any better? No. After continuous slating and poor reviews of the PlayStation version, the project was cancelled. A collective sigh of relief from the gaming community followed.



» [PlayStation] Go zombie hunting and monster blasting in the not very scary but playable horror game, *Crypt Killer*.



» [PlayStation] Six years of development brought you a great platform game in *Heart of Darkness* with exceptional music.



» [Arcade] Old-school gaming returns to arcades with a new *Arkanoid* coin-op. Just a pity it was Japan-only…

CHARTS

FEBRUARY 1997



SATURN

1 Virtua Cop 2 (Sega)
2 Worldwide Soccer '97 (Sega)
3 Tomb Raider (Eidos)
4 Daytona USA CCE (Sega)
5 Command & Conquer (Virgin)

MEGA DRIVE



1 FIFA '97 (Electronic Arts)
2 Sonic 3D (Sega)
3 Premier Manager '97 (Sega)
4 Toy Story (Sega)
5 Desert Strike (Electronic Arts)

PLAYSTATION



1 Tomb Raider (Eidos)
2 Die Hard Trilogy (Electronic Arts)
3 FIFA '97 (Electronic Arts)
4 Soviet Strike (Electronic Arts)
5 Crash Bandicoot (Sony)

MUSIC



1 Where Do You Go (No Mercy)
2 Don't Speak (No Doubt)
3 Ain't Nobody (LL Cool J)
4 Discotheque (U2)
5 Don't Let Go (Love) – (En Vogue)

There was more horror with Konami reporting the release of its arcade conversion of *Crypt Killer* was now available for PlayStation and Sega Saturn. The horror themed first-person shoot-'em-up would see you battle through six varied levels of zombie and monster mayhem while trying to locate the Eyes Of Guidance crystals. The levels included caves, forests and, of course, crypts. The graphics, while lacking in definition, worked reasonably well with 2D sprites on 3D backgrounds.

Also, if Sega Saturn owners still had their lightgun from *Virtua Cop* kicking around, then they had use for it once again. While *Crypt Killer* was certainly not without fault, the gameplay made it, quite literally, a blast.

The cinematic-style platform game *Heart Of Darkness* for the PlayStation had already been in development for five years. An update this month from the developer Amazing Studio previewed some stunning screenshots but tempered the news by indicating further delays. The graphics, the Full Motion Video segments and the full orchestral score – the first instance of a game using an orchestra for its entire soundtrack – were to blame.



» [Sega Saturn] With a change of style in graphics for the franchise, *Contra* looked great but didn't play as well as earlier incarnations.

So what of the game? You played a boy called Andy who has his pet dog stolen during a total eclipse by a monster who takes it back to the foreboding sounding Darklands. Your task was simply to go there and get your dog back from the Master Of Darkness.

It had a good balance of pinpoint platform leaping, shooting and testing puzzles and with its sublime graphics and soundtrack, it proved extremely playable.

The main quibble directed at the game was its longevity, with it lasting just a handful of hours. Whether the wait for such a short-lived gaming experience was worth it was open for debate. However, *Heart Of Darkness* was beautifully crafted and worthy of the 1.5 million units it sold. It was just a shame we had to wait until July 1998 to play it. *



» [Arcade] *Street Fighter III* hits arcades with a new roster of fighters for a new generation of gamers.

NEWS FEBRUARY 1997

7 February saw the world premiere of *Dante's Peak* starring Pierce Brosnan and Linda Hamilton. It was the story of a dormant volcano situated in the picturesque town of Dante's Peak that suddenly becomes very active indeed. Brosnan, the volcanologist, and Hamilton, the town's mayor, try to persuade everyone they should leg it as fast as they can… Lava flowed and pyroclastic clouds and much screaming ensued…



10 February saw British rock band Blur release their fifth studio album. The self-titled album gave us the tracks *Beetlebum* and *Song 2*, which was later used in several commercials, films and the Electronic Arts game, *FIFA 98: Road To The World Cup*. Woo hoo.

20 February saw Ben And Jerry's newest ice cream flavour launched, the glorious Phish Food. Containing marshmallow, caramel and fish-shaped chocolate pieces, the name was also a nod to the American rock band Phish.

22 February saw the announcement by scientists in Scotland that they had successfully cloned an adult sheep. The female sheep called Dolly had actually been born in July 1996 although the announcement was deliberately delayed. Dolly was the first instance of a mammal cloned from an adult cell. Previous attempts had used embryo cells.

26 February saw the death of American actor David Doyle. While the name may not be instantly recognisable, the prolific television and movie actor would be best remembered as Bosley in the original television series *Charlie's Angels*. He died of a heart attack aged 67.

THIS MONTH IN…

MEAN MACHINES SEGA

Andy Mee, Head of Marketing and Sales for Sega Europe, gave an interview on aspects of Sega, the Saturn and its battle with Sony and the PlayStation. Mr Mee stated, "I've not gone on the record attacking PlayStation consumers but a lot of them are just graphics tarts". Delightful.



AMIGA FORMAT

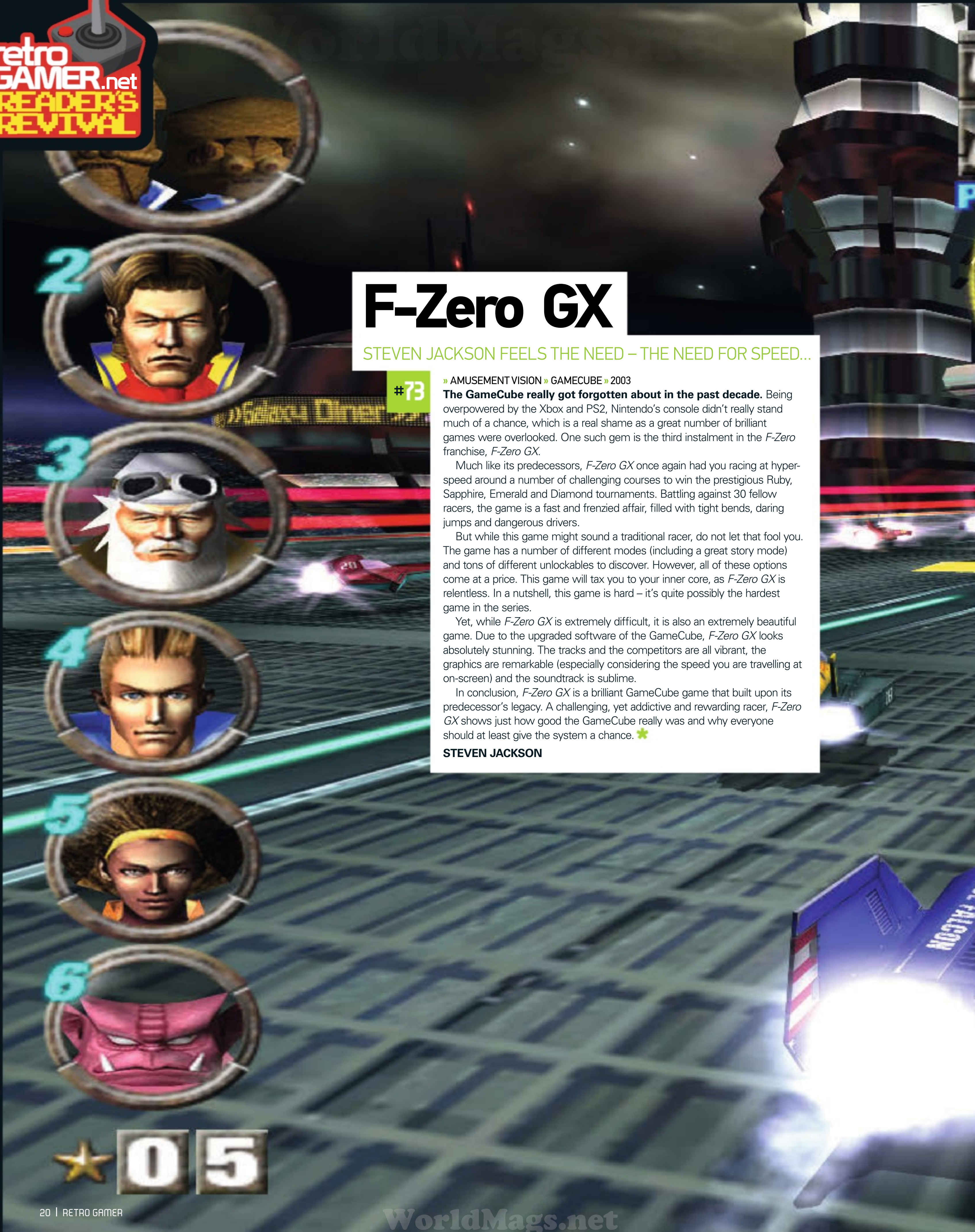
If there was ever a tangled mess more confusing than that of the ownership of Amiga Technologies then we're yet to see it. *Amiga Format* attempted to fathom the latest developments now the previous owner had folded. Canadian company Quikpak was the latest to chance its arm…



COMPUTER & VIDEOGAMES

Finally… the last piece of preview news before the Nintendo 64 UK launch on 1 March. *C&VG* confirmed details regarding price and launch titles with the four launch titles being *Mario 64*, *Pilot Wings 64*, *Wave Race 64* and *Star Wars: Shadows Of The Empire*.





F-Zero GX

STEVEN JACKSON FEELS THE NEED – THE NEED FOR SPEED…

#73

» AMUSEMENT VISION » GAMECUBE » 2003

The GameCube really got forgotten about in the past decade. Being overpowered by the Xbox and PS2, Nintendo's console didn't really stand much of a chance, which is a real shame as a great number of brilliant games were overlooked. One such gem is the third instalment in the *F-Zero* franchise, *F-Zero GX*.

Much like its predecessors, *F-Zero GX* once again had you racing at hyper-speed around a number of challenging courses to win the prestigious Ruby, Sapphire, Emerald and Diamond tournaments. Battling against 30 fellow racers, the game is a fast and frenzied affair, filled with tight bends, daring jumps and dangerous drivers.

But while this game might sound a traditional racer, do not let that fool you. The game has a number of different modes (including a great story mode) and tons of different unlockables to discover. However, all of these options come at a price. This game will tax you to your inner core, as *F-Zero GX* is relentless. In a nutshell, this game is hard – it's quite possibly the hardest game in the series.

Yet, while *F-Zero GX* is extremely difficult, it is also an extremely beautiful game. Due to the upgraded software of the GameCube, *F-Zero GX* looks absolutely stunning. The tracks and the competitors are all vibrant, the graphics are remarkable (especially considering the speed you are travelling at on-screen) and the soundtrack is sublime.

In conclusion, *F-Zero GX* is a brilliant GameCube game that built upon its predecessor's legacy. A challenging, yet addictive and rewarding racer, *F-Zero GX* shows just how good the GameCube really was and why everyone should at least give the system a chance.

STEVEN JACKSON



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WHEN ARCADES RULED THE WORLD

Join **Retro Gamer** as we revisit the arcade industry's origins and chart its evolution from the Seventies to the present day





WHAT'S INSIDE

No matter if you were the first kid on the street with an Atari 2600 or a Spectrum owner marvelling at Bob Pape's conversion of *R-Type*, it's clear that arcade games were the glue that bound the videogame industry together.

As soon as the success of Atari's *Pong* was established, arcade games became one of the key forces driving innovation in hardware and software within the videogame industry. For decades, the arcade was the only place to find truly cutting-edge gaming. Home computer and console games could only play catch-up with conversions.

But it couldn't last forever. Changing player tastes and rapid advances in technology resulted in the swift decline of the arcade business in the 21st Century, but the market never died. From the early pioneers of the arcade business to those still making a living from coin-up gaming today, **Retro Gamer** has spoken to key players from the industry to bring you the history of arcade gaming. ▶

THE 70s

THE GENESIS OF AN INDUSTRY

If you grew up in the Seventie you were there to witness the introduction and proliferation of arcade games. Marty Goldberg takes you on a narrative journey of what it was like

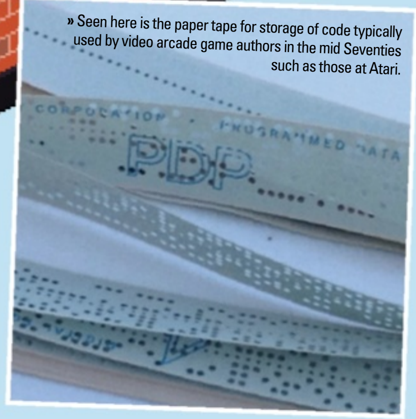


THE SEVENTIES ACTUALLY REPRESENTS AN INTERESTING PERIOD IN TIME FOR VIDEO ARCADE GAMES. ONE OF GROWTH AND PENDING DESTRUCTION. A DECADE THAT WAS SIMULTANEOUSLY A GENERATOR OF CRITICAL MASS FOR THE NEW MEDIUM WHILE ALSO WREAKING TOTAL HAVOK ON THE LONG ESTABLISHED COIN ENTERTAINMENT INDUSTRY.

The seed for this world influencing event had begun in 1969 when two office mates and friends at audio giant Ampex decided to pursue the one's vision of marrying computer technology and arcade gaming. Nolan Bushnell and Ted Dabney started to create a video arcade game based on an earlier computer game the two witnessed at Stanford called *Spacewar!*.

You have to understand what a novel if not naive concept this was, that two guys could come in and create an entirely new entertainment medium let alone to hope that it would gain any traction in the already established coin industry. First, they were out in



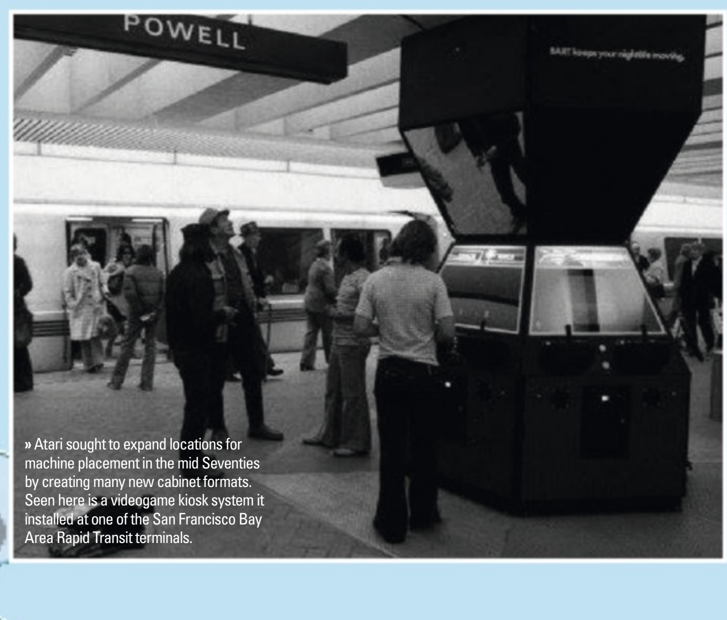


» Seen here is the paper tape for storage of code typically used by video arcade game authors in the mid Seventies such as those at Atari.

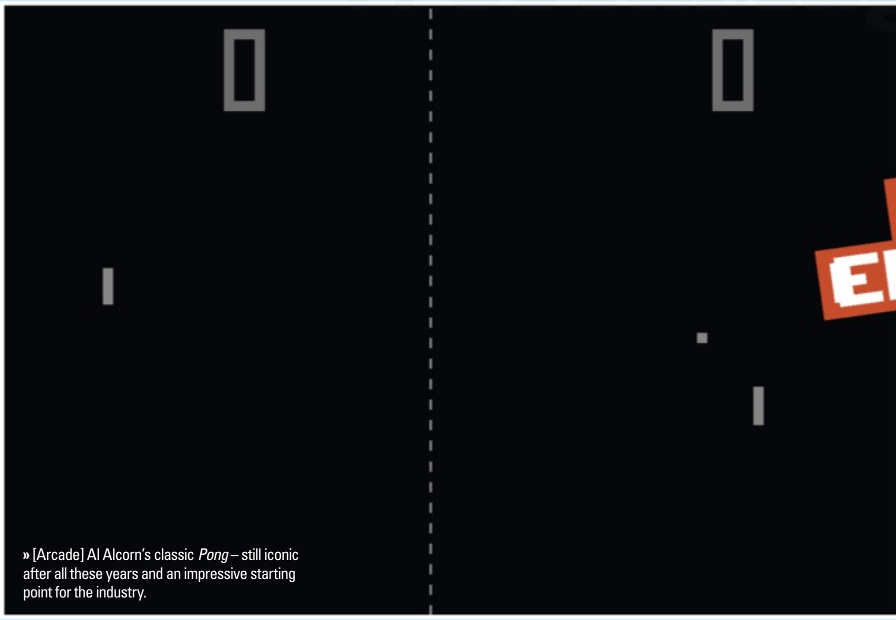
California. This was a location about as far away from Chicago, the established mecca of the coin industry, as you could possibly be. Second, they'd have to convince an established coin company to take a chance on it. The industry at that time was dominated by companies that had already been around for decades like Williams, Gottlieb, Bally and Chicago Coin.

The games they were pumping out had been mainly pinball and gun based, though over the Sixties more specialised electro-mechanical (EM) games had gained popularity. Games based on simulations whose subjects would become popular as videogames almost a decade later. Ed Logg, creator of such videogame classics as *Asteroids*, *Centipede* and *Gauntlet* remembers his first exposure to these games: "The first time I played a coin-operated game was at the Berkeley Student Union. It was a game where you tried to shoot down bombers which appeared over the horizon. It wasn't a videogame because the planes appeared to be on a rotating piece of screen. There was a pattern so I could play the game for as long as I wanted."

There was also the uphill battle of the stigma arcades had in a lot of communities as a hotbed for raucous teenagers or in some cases organised



» Atari sought to expand locations for machine placement in the mid Seventies by creating many new cabinet formats. Seen here is a videogame kiosk system it installed at one of the San Francisco Bay Area Rapid Transit terminals.



» [Arcade] Al Alcorn's classic *Pong* – still iconic after all these years and an impressive starting point for the industry.



"My earliest memories of arcades were of shadowy places where naughty things might happen"

Al Alcorn

crime and gambling. As *Pong* creator Al Alcorn relates, "My earliest memories of arcades were of shadowy places where naughty things might happen. Besides the usual pinball machines and 'love' testers there were movie machines that showed graphic movies. At Playland at the beach there was the Fascination arcade, which was grey area gambling. These places were not for family entertainment."

Bushnell and Dabney's initial goal was to start a videogame engineering firm, researching and creating games to license to the big coin companies to produce. If you're asking why they were 'engineering firms', it's because the early arcade videogames were not coded – they didn't have a microprocessor. Rather they were what's called 'state machines', a grouping of electronic circuits that carried out various functions based on the input – in this case the game's controls. You'd have one circuit to put an object on the screen, another to move them, another to detect a hit, and so on.

They lucked out however, and found the one coin-op company based in California; Nutting Associates. Something of an upstart itself, Nutting had been formed by Bill Nutting after creating an EM-based quiz game called *Computer Quiz* with his brother Dave Nutting. Their initial partnership had quickly fizzled and Bill started Nutting Associates in California to sell the game while Dave started Nutting Industries in Milwaukee, Wisconsin to sell his version. Releasing a string of similar games and recently firing most of his engineering staff, Bill was looking for a new game to keep the momentum going. He got the new game in Bushnell and Dabney's proposal plus a new engineer out of the deal as well as Bushnell left Ampex to join Nutting (followed by Ted close to a year later). Bushnell and Ted's deal was for Nutting to license the game for manufacturing, but they'd do all development on their own time (working after hours at Nutting and at Ted's house).

By August of 1971 they were testing their prototype at a local college bar called the Dutch Goose to great results. The following month, as Bill Pitts was installing his *Galaxy Game* (which uses an actual full DEC minicomputer running *Spacewar!* code) at the Stanford Student Union they found the results at their subsequent test locations far less promising. It turned out the students at Dutch Goose were mainly students pursuing degrees in engineering, physics, and computers. Stepping out of that comfort zone of technical professionalism meant that the patrons at other locations ▶

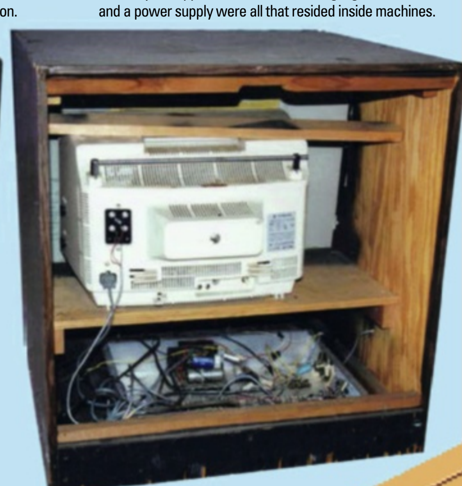
» Early arcade games did not use microprocessors or software. Rather they used logic chips, such as this one below.



» The exterior of a prototype *Pong* cabinet from the Seventies. This angular design was fairly common.



» Usually a stripped down television, single game board, and a power supply were all that resided inside machines.



KEY EVENTS

1971

■ *Computer Space*, the world's first video arcade game is tested in August at the Dutch Goose in Menlo Park, California.

1972

■ Atari Inc. is formed in July of this year and work begins on what becomes their first video arcade game, *Pong*. By mid August it's being play tested at Andy Capp's Tavern.

1975

■ Atari/Kee released Indy 800, the first multi-layer video arcade game in April. A massive game supporting 8 players at once. They also release the first driving video game in a full cockpit style cabinet, *Hi-Way*.

1975

■ Midway releases *Gun Fight*, the first microprocessor driven video arcade game ever.

1976

■ Exidy releases *Death Race*. Loosely based on a film of the same name, the driving over of figures that look like people creates the first controversy in videogames.

DEVELOPER TOP PICK



DAVID PERRY

"*Moon Cresta*. In it you can stack up your firepower, so you go from weak to strong to weak. I used this idea in games for many years. You'll see it in games like *Earthworm Jim* (weak worm in a strong suit), *Messiah* (weak baby possessing a giant's body) etc. I personally like that gameplay style where you're kicking butt one minute, then very defensive the next."

were entirely confused by the gameplay, controls and overall presentation. In fact this was when the duo learned that presentation across the board was just as important to its success, something the big boys of the coin industry already knew. Bushnell countered with a slick new futuristic design and a somewhat clearer control scheme. A package that actually caught the attention of everyone when they showed it off in Nutting's booth at the main trade show of the era, the Music Operators of America in Chicago. The automated music industry – jukeboxes – was actually the dominant force in coin-operated entertainment at the time, with arcade games being a subset. By the mid Seventies the show would change it's name to the Amusement and Music Operators of America thanks in no small part to the rising dominance of the coin amusement industry thanks to arcade videogames.

Don't expect the type of astonished hoopla that the Apple II generated during its debut at the West Coast Computer Faire six years later though. The common questions Bushnell and Dabney got were "Isn't this just a novelty?" or "Isn't it expensive to broadcast?" (yes, some thought that because there was a television inside that the picture of the game was being broadcast). Regardless, contrary to some modern retellings of the story, their game (named *Computer Space* by Bill Nutting) went on to sell what is considered a decent average run for an arcade game at the time – enough that the medium was considered viable.

Bushnell and Dabney famously left Nutting the following year to formally start their engineering firm Syzygy Company, only to have it grow into the future industry juggernaut Atari Inc thanks to a game developed by their first engineer, Al Alcorn. *Pong* started off as a starter exercise for Alcorn only to turn into a lesson for the entire coin amusement industry. With simple gameplay and controls, the cabinet developed by Dabney also featured a philosophy he and Nolan had learned during their *Computer Space* days. "Nolan was careful to have *Pong* look very understated so as not to offend women or families. We wanted to stay away from the girly (side art) that were on many pinball machines," states Alcorn. *Pong* is what drove the industry to take notice of the new medium, and a quick expansion as new companies sprung up everywhere with their own versions of the game. Once the big boys jumped on board as well and demand at established coin distributors grew across the globe, arcade space gradually became a fight of old technology and new as owners stocked both and the major companies continued to produce both. In fact for much of the Seventies pinball machines and video arcade machines were neck and neck in popularity and earnings.

A race that was understandable, as video arcade games were still in such a primordial state. Every new game was some new feat, especially since they were still being created purely through engineering. Colour came early on, thanks to Atari's Cyan research lab in Grass Valley that developed an alternate full color version of *Gotcha* that Atari released in October 1973. Animated characters were introduced by Ramtek's *Baseball* in 1974 as the industry moved to make more detailed and interesting games beyond simple ball and paddle driven games. 1975 saw the intro of giant

DEVELOPER TOP PICK



JIM BAGLEY

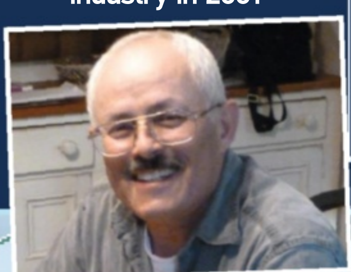
"*Scramble* is my favourite arcade game of all time. A local Spar shop got a sit-down cocktail cabinet of it and ran a competition of who could be the first to complete all the levels. I have many great memories playing *Scramble*, even to this day, and now my girls enjoy playing it too!."



> **"It wasn't a videogame because the planes appeared to be on a rotating piece of screen"**
> Ed Logg

ARCADE INITIATION

Though largely unknown to many, Jeff Bell is uniquely experienced to comment on the video arcade game industry. Starting in February 1973 at Atari Inc, he remained in the industry until 2003 when Midway Games shut down what was left of Atari's coin operations after exiting the coin industry in 2001



When did you first experience videogames and how did you get involved with Atari and video arcade games so early on?

In late 1972 I had just applied for a job at Toys 'R Us and was just about to go into the hospital for health issues when my friend Keith Lafever came over to my house and excitedly said 'You've gotta see this! You've gotta come!'. So I jumped on the back of his motorcycle and ran up to Sunnyvale Bowl where there was a *Computer Space*. I put the only five dollars I had to my name in that machine, it was my first coin-op videogame, and I said "I want to do this (create games)." It was the coolest thing I had ever seen. When I got out of the hospital in November one of my friends, Derek Becker, was working at this place called Syzygy collecting coins out of pinball and videogame machines for them. He told me all about Syzygy and their game *Pong* that was coming up. When I got out of the hospital it turned out all my friends were working there at Syzygy. I went in and met Nolan Bushnell, who gave me a job, but I couldn't start until February when my doctor cleared me. Because I couldn't lift anything I became the third *Pong* inspector.

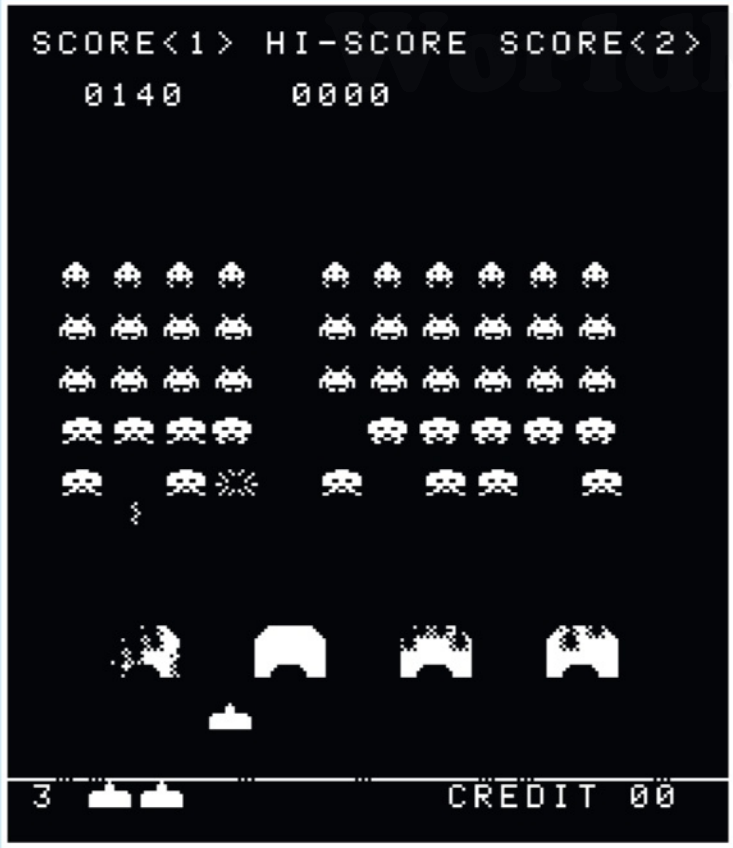
What jumps out about video arcade games in the Seventies era for you compared to the later decades?

In 1972-74, we had to explain to people what a videogame was. By 1976 that had changed to explaining what a 'coin-op' video game was. By the Eighties we needed to explain what the 'Real Atari' was.

Can you elaborate on the last two statements?

Sure. By the mid Seventies, the first impression many people had of videogames came from home game consoles. Whenever somebody discovered that I worked at Atari, they would say something like 'Oh yes! I have one…', and I would feel the need to explain that I worked in 'Coin-Op', that a quarter was required to play. By the Eighties, perhaps as an outgrowth of the Consumer Division's success, we began to refer to ourselves in conversations and on T-shirts as 'Coin-Op – The REAL Atari'. This wasn't well received by the other divisions. I heard that we had been asked to not use the phrase. Today I still respond as I did in the Eighties, 'I worked at Coin-Op, the REAL Atari'.





multiplayer games like *Indy 800* and the continuation of the expansion of gaming ideas, including a variety of driving and war games. However, it was one technological advancement in video arcade games that made the biggest splash that year: the addition of microprocessors.

All the major arcade companies had already begun exploring adding microprocessors to pinball machines during 1974, and by early 1975 that had extended into video arcade games; Lead by Cyan at Atari and Dave Nutting Associates (yes, that Dave Nutting) that was now affiliated with Bally/Midway. Dave Nutting's project – transferring the Taito-licensed *Western Gun* into a microprocessor driven game – was first in November 1975. That was (almost ironically) followed by Atari/Kee's *Quiz Show* quiz game in April 1976 at the same time they were debuting one of the last of their big non-microprocessor games, *Breakout*.

Even with all this advancement of videogames in the coin industry, video arcade games were still just more of a curiosity in the public consciousness. It really wasn't until this mid-Seventies period and the arrival of the inexpensive TV-tennis home game systems like Atari's Home Pong and Magnavox's Odyssey 100 and 200 that public awareness really began to take off. Certainly video arcade games had been making appearances in film and television since the early Seventies (the first well-known one being *Computer Space*'s appearance in 1973's *Soylent Green*). But now with the buzz generated by home games, the appearances in those entertainment mediums became more frequent.

The real growth of video arcade games though, both as the dominant force in the coin industry and as a popular form of entertainment in general, started in the latter part of the Seventies. A result of what was really a perfect storm of reasons, driven by the uniquely timed appearance of a very popular movie combined with a cornucopia of microprocessor driven devices along

» [Arcade] Electromechanical games predated video games in the arcade, informing the cabinet design of the latter.



» [Arcade] *Tank*'s military combat theme would be replicated often in years to come.



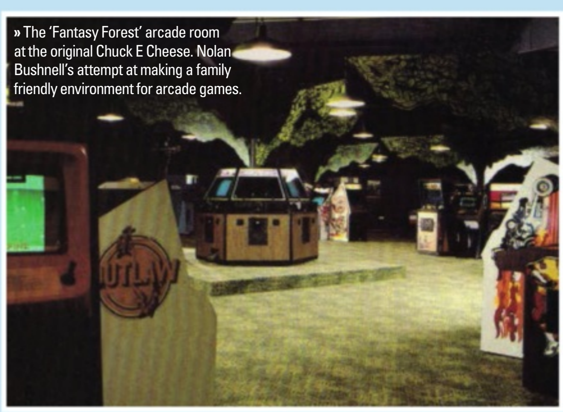
with some very popular video arcade games being released. From a pop culture perspective, the late Seventies was an explosion of high-tech interest by the public, arguably fuelled by the 1977 release of the film *Star Wars*. Demand for electronic driven consumer devices, gadgets and entertainment seemed to skyrocket and in the arcades videogames were poised to fulfill a kid's demand to live their own space battle-driven fantasy.

The game which lead the charge to feed that hunger, and became a phenomenon of its own during the process, was *Space Invaders*. Created by the same person behind Taito's *Western Gun*, Tomohiro Nishikado, in 1978 it took Japan by storm and soon after the rest of the world. Games like Exidy's *Star Fire* brought the literal *Star Wars* experience to the arcade, but it was the further extreme popularity of 1979 space shooter games like Namco/Midway's *Galaxian* and Atari's *Asteroids* and their ever-increasing game technology that gave a taste of what was in store for the Eighties while providing a thirst for more.

It took eight years for the beginning of the dominance of videogames in the coin industry to come about, however 1979 was really when the demand for the engaging medium skyrocketed. Many non-traditional locations (family restaurants, doctors offices, gas stations, etc) suddenly started operating the computer-driven machines there, and for a kid it seemed everywhere you'd go there was an opportunity for you to ask your parents for a quarter (or a ten pence piece in the UK) to play a game. It would also set up a time when dominant hits were first released as coin-op machines and later ported to home versions, something that would last until the mid Eighties.



» The 'Fantasy Forest' arcade room at the original Chuck E Cheese. Nolan Bushnell's attempt at making a family friendly environment for arcade games.



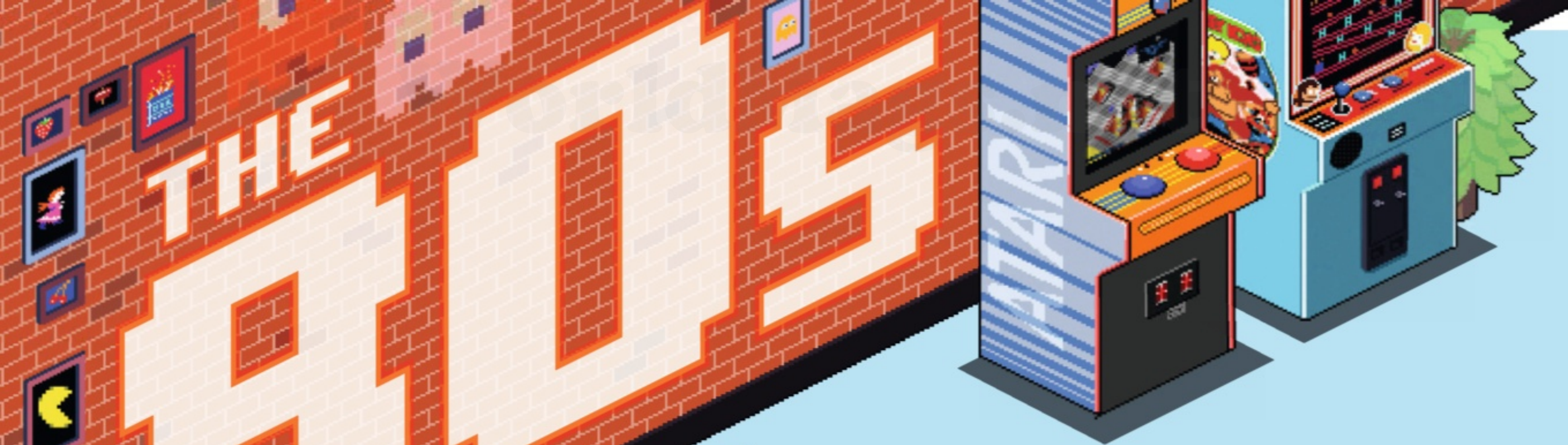


DEVELOPER TOP PICK



BOB POLARO

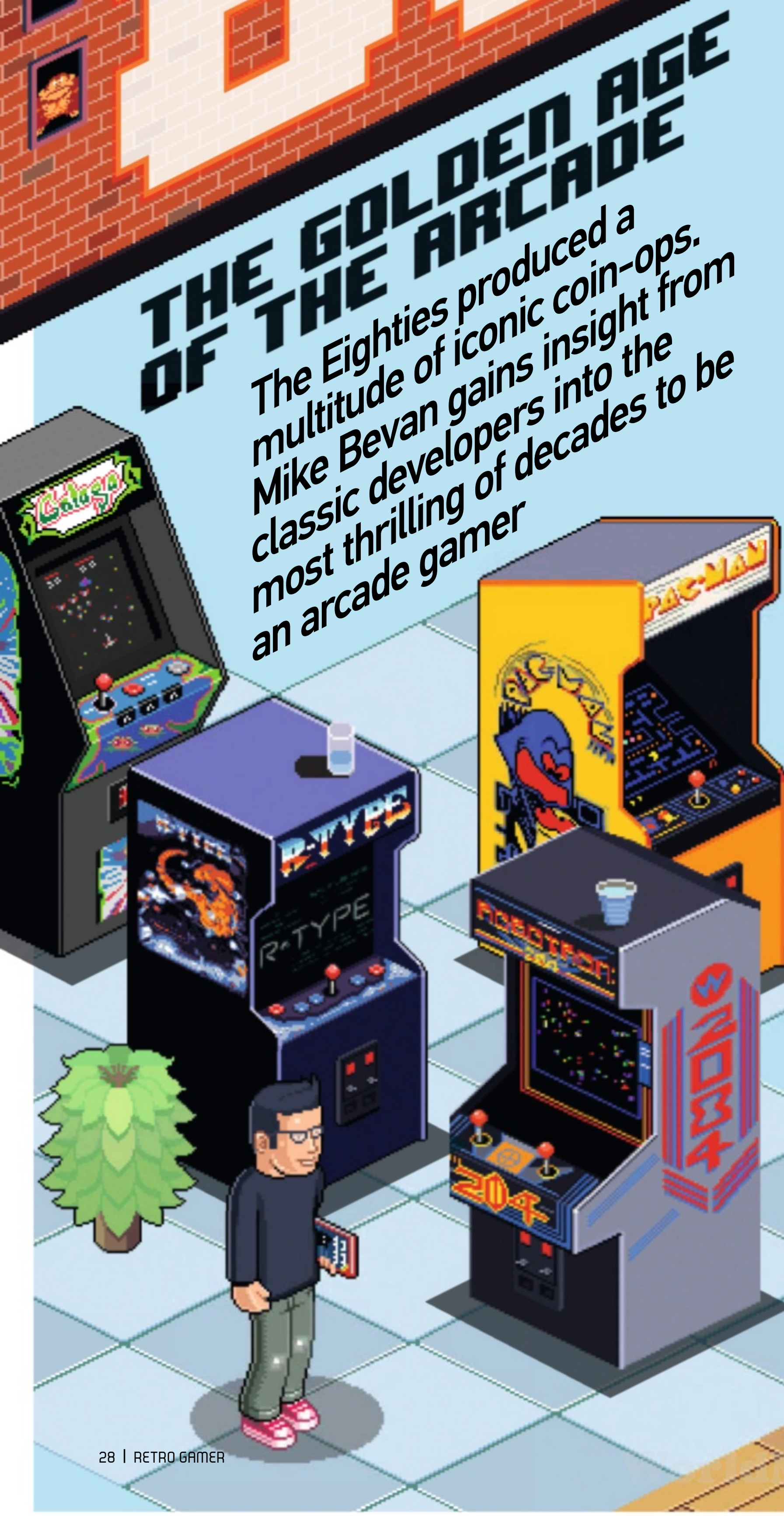
"Without question *Missile Command* – best feel of any game when putting out the spreads."



THE 80s

THE GOLDEN AGE OF THE ARCADE

The Eighties produced a multitude of iconic coin-ops. Mike Bevan gains insight from classic developers into the most thrilling of decades to be an arcade gamer



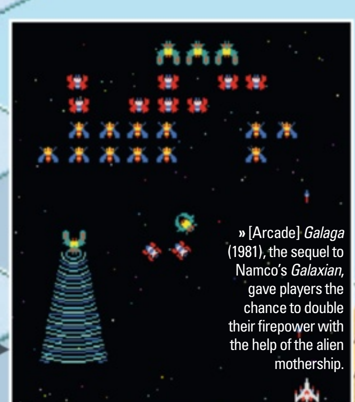
IF THE SEVENTIES HAD BEEN A TIME OF EXPERIMENTAL INVENTION FOR THE ELECTRONIC AMUSEMENT INDUSTRY, THE EIGHTIES WAS THE DECADE IN WHICH IT BLOSSOMED WITH INNOVATION, USHERING IN THE SO-CALLED GOLDEN AGE OF ARCADE GAMES. "It was the time when fully formed videogames first appeared," says celebrated arcade designer Eugene Jarvis. "Going from almost a blank screen to incredibly crafted games unleashed a mania of hundreds of millions of crazed players worldwide that couldn't get enough of these new fangled videos. Since so few videogames had come before, entire new genres were created; sports, character, maze, shooters, fighting, driving games… The excitement of seeing the birth of such a cornucopia of original titles was thrilling to players."

New games were appearing so fast in amusement parlours in the period from 1980 to 1983 that it was hard to keep track of all the goodies – *Battlezone*, *Missile Command*, *Pac-Man*, *Defender*, *Frogger*, *Tempest* and *Donkey Kong* to name just a handful. It was the decade that saw the appearance of the first LaserDisc game, *Dragon's Lair*, spectacular coin-op cabinets like *Spy Hunter*, *Star Wars*, *OutRun* and *Space Harrier*, the first arcade game with 3D polygon graphics, *I, Robot*, and the rise of companies like Capcom and SNK. Behind the burgeoning cabinet rosters of the arcade operators lay an East versus West power struggle between North American and Japanese manufacturers, with the likes of *Space Invaders* publisher Taito, Nintendo, Konami, Namco and Sega competing for floor space with Atari, Williams Electronics, Stern, Bally/Midway and Exidy.

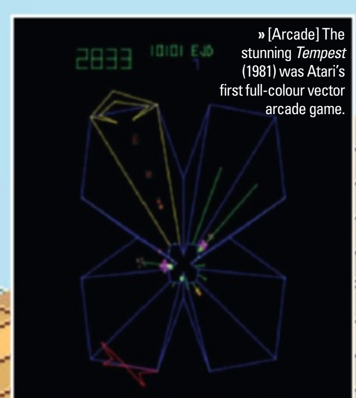
"It was a gold rush," says Exidy programmer Ken Nicholson. "Anything with a screen at a pizza parlour would gobble up quarters. Another factor was the availability and growth of microprocessors. Before the 8080 and 6502, game development was based on much simpler logic. In the early Eighties coin-op games from Japan started to grab the market. At first they were unappealing to US game players for aesthetic reasons but then games from Japan began to dominate the arcade, and they had a price advantage…"

"The Japanese developers played a huge role in creating many mega-titles of the era," admits Eugene. "Although videogames originated in the US, as soon as they were popularised, many of the big innovations came from Japan. Different styles of play evolved in the East and West. They were very dominant in character, maze, shooting and driving genres, and were highly influential in the birth of fighting games. Many Japanese developers, strongly influenced by anime culture, emphasised character development, hand-drawn animation and backgrounds, and a more deterministic, scripted, pattern-type play as in *Space Invaders*, *Galaxian* and *Pac-Man*."

"American designs reflected a programmer-centric design culture, emphasising algorithmic generation of backgrounds and enemy dispatch. There was an emphasis on random-event generation, particle-effect explosions and



» [Arcade] *Galaga* (1981), the sequel to Namco's *Galaxian*, gave players the chance to double their firepower with the help of the alien mothership.



» [Arcade] The stunning *Tempest* (1981) was Atari's first full-colour vector arcade game.



» [Arcade] Gottlieb's *Q*bert* (1982) was one of the most successful US-developed character-based arcade games.

physics in titles such as *Asteroids*, *Space Wars* and *Defender*. The increased emphasis on algorithmic AI, physics and randomness favoured a more improvisational and tactical playing style, due to the lack of scripted events. It was a big challenge to be innovative in the face of such revolutionary competition. All Western developers were strongly inspired by the master designs coming from Japan. For example, American games such as *Centipede*, *Q*Bert* and *Robotron 2084* were strongly influenced by Japanese character animation styles."

While the Japanese had the edge with character-based titles like *Pac-Man*, *Dig Dug* and *Mr Do!* American designers led the way with engaging and novel action games and shoot-'em-ups such as *Joust*, *Tempest* and *Defender*. "Character and shooter games were the two genres that defined the era," states Eugene. "On the character side, *Pac-Man*, *Donkey Kong*, *Q*bert*, *Frogger* and *Mario Bros* set the pace; and in the shooters the defining titles were *Missile Command*, *Defender*, *Berzerk*, *Robotron*, *Galaga*, *Centipede*, *Tempest* and *Zaxxon*, among others."

Williams Electronics was, alongside Atari, arguably the most pioneering of the early Eighties US coin-op publishers. It was one of a number of American companies, including Bally, Stern and Gottlieb, which made the transition from producing mechanical amusements and pinball games to video arcade games. Eugene had started ▶



DEVELOPER TOP PICK



TRIP HAWKINS

"*Gauntlet* is my favorite arcade game; in fact I bought my parents an upright *Gauntlet* that they had in their basement for many years. I can still hear the game – 'Welcome, Elf!'"



CLONE WARS

Jeff Minter discusses Eighties arcade tributes



What's your earliest memory of an arcade?

I'm so ancient my memories of arcades actually go back to before the dawn of time when there were no videogames. When I was five years old our family started what was to be a succession of annual Welsh holidays near Snowdonia. Central to these outings were frequent visits to The Golden Sands on the seafront at Tywyn, a combined chip shop and arcade. No videogames, but I remember playing on the grabber machines, penny slot machines, pushers, mechanical horse racing thingies and those driving games that had a rolling film with the track on it and your car was on a stick. The first arcades I used to hang out in with any kind of regularity were the old Piccadilly Arcade up in London, and the Crystal Rooms off Leicester Square. The old Piccadilly Arcade no longer exists as it was underneath where the Trocadero is these days. I can still remember exactly where the *Star Fire* machine was (that I put some tasty high scores on).

Why do you think so many developers started off making clones?

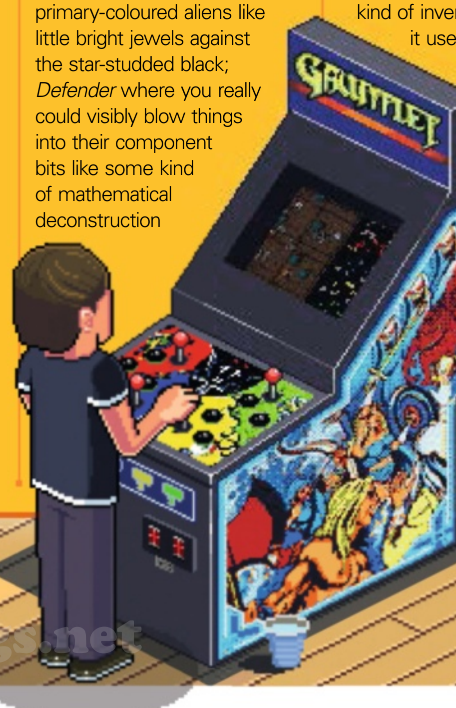
Cloning an arcade game was a good way to learn the basic necessary skills of game design and programming. Arcade games are existing designs that you know work, so programming them when you're learning teaches you a lot. You learn the basic skills of moving stuff around, reading joystick inputs, making noises and implementing game logic using an established template and you know when it's working right. When it's working but doesn't feel like it should then you learn about tuning stuff as you adjust things to make it correct. You learn about hardware limitations and you start maybe learning ways to program around them if you're trying to clone an arcade game that came from hardware more powerful than you are using. And at the end of the day if you weren't too cheeky about it after all that good learning you ended up with a product you could sell.

You've cloned many popular shoot-'em-ups. What do you love about the genre?

I've just always loved shooters, I enjoy the headspace they put you into, the so-called 'zone' state that is always the place I aim to take you to in my games. I particularly enjoyed the look of some of the earlier shooters, again the phrase "abstract beauty" springs to mind. In most games the graphical limitations of old systems just make the games look like shit when viewed through modern eyes, but when you look at stuff like the pure glowing vectors of *Asteroids* and *Tempest*; *Galaxian* with its insectoid primary-coloured aliens like little bright jewels against the star-studded black; *Defender* where you really could visibly blow things into their component bits like some kind of mathematical deconstruction firework display; the absolutely perfect balance of beauty and brutality that is *Robotron*… Those things are still beautiful now, but back then, when only a few years previously the whole idea of 'game' involved cards or boards or sports you were rubbish at because you didn't have 3D vision, the opportunity to step into and dance within these exquisite glowing other-dimensional worlds was something extraordinary and wonderful. It's that feeling that I want to try to convey to people today, with the kind of stuff I make.

Your own games improve on the arcade originals, why do you do this?

I think it's just a natural progression; when I started the first things I did were stuff like *Centipede* and *Space Invaders* on the ZX81 and *Defenda* on the VIC-20, and then Atari started getting less tolerant of people doing clones and I wanted to do a *Centipede*-style game on the VIC anyway, so I perforce had to make it not so obviously *Centipede*-ish, and ended up making something that I actually liked more than vanilla *Centipede*. Learning that it's okay to colour outside the lines is an important part of anything really. Scrolling shooter suddenly didn't *have* to mean *Defender* or *Scramble* – why not camels or sheep? These days of course it's kind of inverted from what it used to be back then, where the arcade games were way more powerful than the hardware you were trying to port them to. Doing a simple remake is pretty easy, but a modern update of a game is tricky to do well.



THE 80s



» [Arcade] Bally/Midway gave players the chance to live out their 007 fantasies in *Spy Hunter* (1983).

▶ out programming sound and gameplay features in pinball games for Atari and Williams, and this early industry experience was to become a huge influence in the creation of his arcade titles, *Defender* and *Robotron 2084*.

"Pinball was a great training ground," he tells us. "Audio was especially important in pins because there is so much dead time where the ball is rolling around the playfield, not hitting any targets. Background sounds were used to generate increased tension and excitement as a game approached a climactic event. My pinball sound work lead to the creation of many of the amazing synthesised sounds for *Defender*, *Robotron* and other games in the classic era at Williams." The format of the traditional pinball table was also a source of inspiration for other game manufacturers. "Games such as *Breakout* and *Space Invaders* adopted the basic human versus machine pinball game style – three balls (or lives) per game, and the ability to win an extra ball (life) with a high scoring achievement," Eugene explains. "So it was a natural transition to move from pinball to video."



© Olly Cotton

» *Dig Dug* (1982), a tunnelling action game from *Pac-Man* manufacturer Namco.

KEY EVENTS

1980
■ Namco launches *Pac-Man*, the first arcade game to eclipse *Space Invaders* in terms of units sold. Atari's *Battlezone* and Williams' *Defender* are released.

1981
■ *Donkey Kong* reaches Western shores, introducing us to the now-familiar King Kong-inspired ape and Nintendo's perennial mascot, Super Mario.

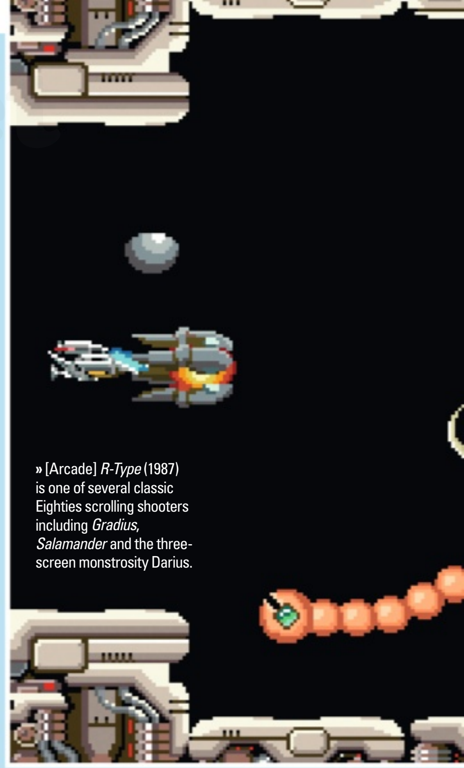
1983
■ *Star Wars*, *Q*bert* and *Spy Hunter* hit arcades, while Cinematronics unleashes *Dragon's Lair*, the first LaserDisc game. Capcom is established.

1986
■ Sega releases *OutRun*, one of the most successful driving games of the decade. Taito releases its popular game *Bubble Bobble*.

1989
■ Atari's *STUN Runner* and *Hard Drivin'* take racing games into full 3D. *Final Fight* and *Golden Axe* represent the peak of popularity for scrolling fighters.

Defender's dazzling, pyrotechnic visuals and blistering sound effect took arcades by storm, and its free-flowing, multi-directional gameplay represented a huge step up from Konami's *Scramble*, released a year earlier. The aural delights of Williams arcade games became a signature of Eighties arcades, along with *Pac-Man*'s distinctive wakka-wakka, *Berzerk*'s robotic speech and the jingles and digitised movie quotes from Atari's *Star Wars* cabinet. Williams also had one of the first two-player cooperative arcade titles with surreal physics-based flap-'em-up *Joust*. "This was one of the first ideas I had on the game," says designer John Newcomer. "If it could be designed for two players to compete or cooperate simultaneously, it meant two coins would go in the machine at the same time.

"Coin-op games at the time were all single-player, except *Wizard Of Wor* and *Space Wars*, which was a dead game by this point. My hope was that *Joust* would be a step towards making two-player take off in subsequent games. Unfortunately, people did not go for the two-player feature. It helped the cash box a bit, but the vast majority of plays were still single-player." But while *Joust* was the exception to the norm in 1982, it paved the way for later Eighties multiplayer coin-ops like *Gauntlet*, *Bubble Bobble*, *Salamander* and *Double Dragon*.

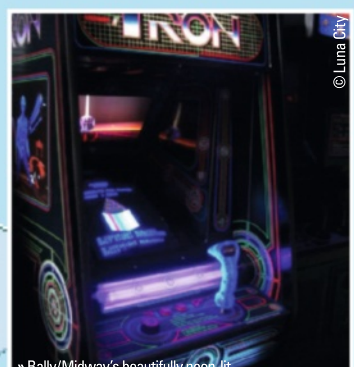


» [Arcade] *R-Type* (1987) is one of several classic Eighties scrolling shooters including *Gradius*, *Salamander* and the three-screen monstrosity Darius.

Designer of *Q*bert* Warren Davis remembers, "I probably played games in bars more than in arcades, and you would know what games the bar had. So when you went back and they had a new game, it was a big deal. You'd check it out, maybe watch other people play and then decide if you wanted to risk one of your own quarters on it.

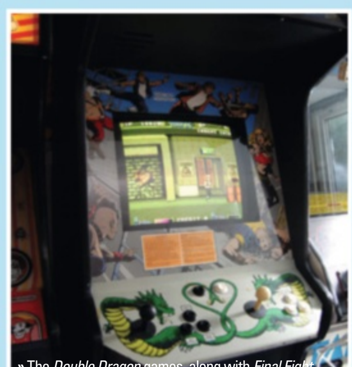
"Williams seemed to have the most intense game experiences. I wasn't particularly a fan, but I admired the skill a person had to have to master their games. My favorite Williams game was probably *Joust*. Who knew I would later get to program *Joust 2*? I liked *Dig Dug* and the *Star Wars* vector game from Atari, *Berzerk* from Stern, *Pac-Man* and *Tron* from Bally/Midway. I always thought Williams pushed the envelope

> **"I always thought Williams pushed the envelope in terms of graphics with Joust and Sinistar"**
> Warren Davis



© Luna City

» Bally/Midway's beautifully neon-lit cabinet for *Tron* (1982) was a work of art.



» The *Double Dragon* games, along with *Final Fight* and *Golden Axe*, were defining scrolling beat-'em-ups.

DEVELOPER TOP PICK



DAVID BRABEN

"My favourite arcade game was the excellent Williams *Defender*, written by Eugene Jarvis in 6502 machine code. I loved the challenge of the game, and for me was the first game I saw in the arcades that wasn't a *Space Invaders* derivative, and was in colour (ie not stick-on strips on the TV screen like *Space Invaders*)."





» [Arcade] *I, Robot* (1983), the first polygon arcade title, from *Missile Command* and *Tempest* designer Dave Theurer.





in terms of graphics with games like *Joust* and *Sinistar*, while Nintendo had the best use of cartoony characters in their games."

"Personally, I enjoyed games from most of our competitors," admits Ed Rotberg, creator of Atari's *Battlezone*, the first coin-op title to allow players full freedom of movement in a 3D landscape. "Certainly Williams was at the top of the list with Eugene's games like *Stargate*, *Defender* and *Robotron*. Tim Skelly, whether at Cinematronics or Gottlieb (*Rip Off*, *Star Castle*, *Reactor*) was constantly earning my respect. Of course, the Japanese manufacturers had some great products as well. *Pac-Man* and *Galaga* took up a lot of my time and money."

Atari continued to break new ground through the Eighties, improving its vector graphic hardware to include colour for titles like *Star Wars*, *Tempest* and *Black Widow*, and becoming one of the first companies to produce true 3D arcade games, starting with 1984's enigmatic *I, Robot*. "Certainly the Vector Generator (followed by the colour VG) allowed for such games as *Asteroids*, *Battlezone* and *Tempest*," says Ed. "There is a case to be made that the Vector Generator hardware allowed for decent 3D for the first time. I also think that, at the other end of the Eighties, the polygon hardware that was first used in *Hard Drivin'* and *STUN Runner* also helped keep Atari as a player in the arcade game business."

"The mix of people was key to the way it all developed," says ex-Atari designer Peter Lipson, producer of the *Indiana Jones And The Temple of Doom* coin-op. "So many people had excellent design skills, and the way we were mixed at work led to a lot of innovation but even more importantly, to a lot of refinement of ideas. Your co-workers had no trouble telling you when something sucked. But when you saw them flocking to your game in the lab during their break times, you knew you had something.

"Another thing people have forgotten is that arcades used to be somewhere you could go with your date just to see what new game might have shown up. I think the era of the fighting games made the arcades far less female-friendly. Not that women haven't always been players, but the casual audience seemed to be put off by the change in aura. After that it seemed games couldn't succeed just by being quirky and fresh. We were entering the equivalent of Hollywood's blockbuster era."



» [Arcade] The atmospheric *Ghosts 'N' Goblins* (1985) hinted at the high-quality Capcom arcade output to come.

DEVELOPER TOP PICK



JOHN ROMERO

"Absolutely, for me, *Pac-Man* changed everything. Most arcade games before *Pac-Man* were all black-and-white alien-killing games. *Pac-Man* emerged with a completely unique premise: run away from cute monsters while eating dots. No violence, no guns, and a window into the possibility space of game design."

MARIO MAN

Alex Crowley talks to Retro Gamer about his Nintendo collection

What made you consider amassing such a vast collection of Nintendo arcade machines?
Preservation – it is essential to hold on to this social history of arcade machines because it is quickly being forgotten about. Also, because arcade machines are so big most collectors only choose the best games for their collection. But I took it on my self to concentrate on Nintendo and that meant taking on and restoring some of the less well-known titles, which I am really proud off as its turns out to be quite a unique and rare collection.

How did you go about it initially?
My first arcade machine was *Space Invaders Part II*, and that was bought on eBay. From there I joined the arcade forums UKVAC & Jamma+ – it has opened the doors to a community of fellow collectors where I have imported machines from the US and found rarities amongst UK collectors and made some very good friends.



In your opinion, what are the highlights of your collection?
The highlights in my collection are *Donkey Kong 3* and *Space Launcher*. *Donkey Kong 3* was a kit that I managed to find in its original box complete for just $160. I then converted a versus upright cab which I bought from *Missile Command* champion Tony Temple and turned it into the underrated game I love to play today. It turned out to be my favourite game in my collection. *Space Launcher*, apart from being a great game, is a highlight because its the only known example to exist in the world amongst the community.

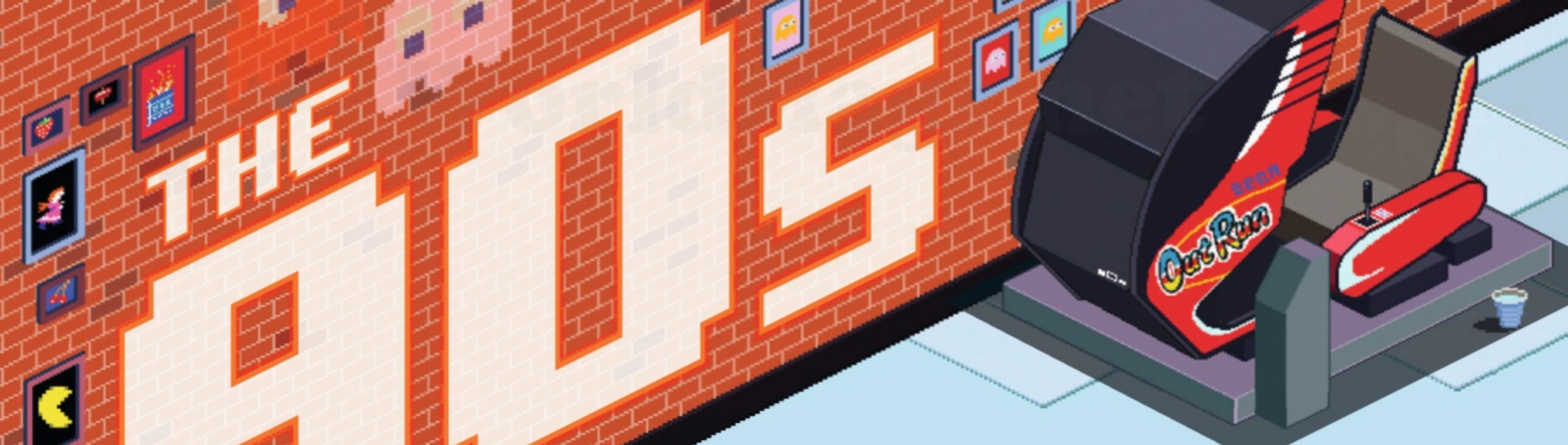
What do you think that the arcade market lost following Nintendo's departure to home consoles?
Well to be honest until *Donkey Kong* came along they were copying a lot of other more successful arcade developers. But I think once *Donkey Kong* dominated the world it changed Nintendo forever. By 1984 arcades were dying out anyway, so it was natural for Nintendo and other manufacturers to pursue the home market. Arcades were never the same after the Eighties kids grew up, but the arcade games didn't.

***Mario Kart Arcade GP DX* was released recently in arcades. What are your thoughts on other companies taking Nintendo's property to market?**
I think it's a great idea, and anyway, Sega made games and distributed them for Nintendo back in the late Seventies. I think Nintendo has to let go of some of its top titles to third parties to help out with their huge and fantastic back catalogue of games.

How do you think arcades have changed since the early days?
They have changed in the sense that kids no longer go there to see the latest games and ultimate new graphics. The technology was new and exciting when we were kids, the machines always had new experiences and innovative ways to play a new game. With synthesized speech, trackballs and extra buttons these were magical light boxes and it was an amazing time to be a kid.







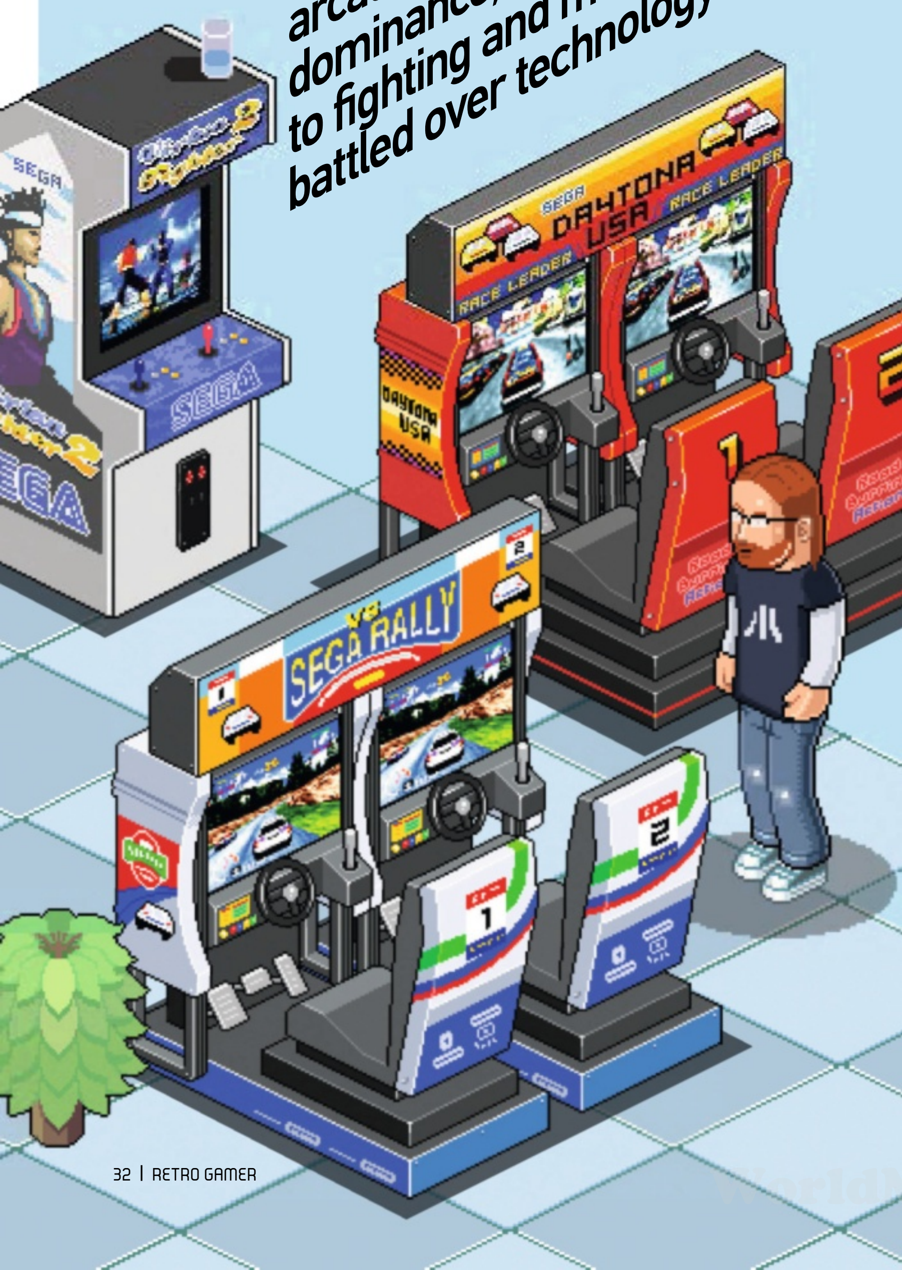
THE 90s

THE DECADE OF RIVALRIES

Nick Thorpe revisits the arcade's final decade of dominance, when players took to fighting and manufacturers battled over technology

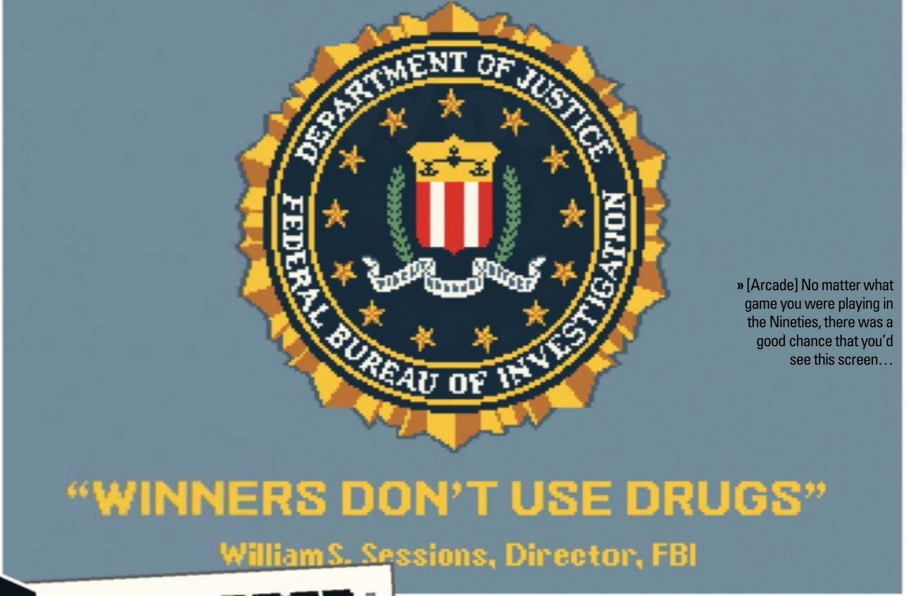
WHILE THE NINETIES WOULD PROVE TO BE A TIME OF GREAT CHANGE IN THE ARCADE INDUSTRY, YOU WOULDN'T KNOW IT TO LOOK AT THE EARLY YEARS OF THE DECADE. Scrolling beat-'em-ups, popularised in the Eighties, continued to prove popular with audiences. Konami delivered a string of licensed hits, from *The Simpsons* to *X-Men*. Taito was still introducing new *Space Invaders* games to market, with *Super Space Invaders '91* making its debut. At Williams Electronics, a young Mark Turmell was working to revive an Eighties hit. "I joined Williams Electronics with the sole purpose of reviving the dual-stick control, and told them so during my interview process," remembers Mark, who was as thrilled by the power of arcade hardware as the players. "I had been doing Atari VCS cartridge-based games, where you only had a few sprites that could be on the screen, so this was an amazing advance for me. In the first few days I kept turning on more and more objects on the screen drifting toward the player, and was mesmerized by the power." *Smash TV* was a game that typified the arcade experience, with fast action, amazing amounts of carnage and huge bosses. However, it wasn't the success that its developers had hoped for. "*Smash TV* won some arcade awards, and had decent success at that level, but it was still a disappointment to me in terms of sales and cash box collections," confides Mark. While Mark would eventually go on to huge success with *NBA Jam* a few years later, *Smash TV*'s situation was one that was mirrored across the industry – a quick look at the arcade releases of 1990 will show you a lot of good games, but solid releases rather than enormous hits. Even the likes of Sega's *G-Loc*, housed in the awesome fully rotating R360 cabinet, were old experiences dressed up with new hardware.

But the first signs that the winds of change were blowing came with the first enormous hit of the decade. The original *Street Fighter* had done reasonable business for Capcom in the Eighties, but the arrival of its sequel in 1991 quickly relegated it to a mere footnote in the history books. *Street Fighter II*'s colourful cast of international martial artists and sublime gameplay quickly endeared it to millions of gamers worldwide. The game would prove responsible for the rise of the one-on-one fighting genre, and is often credited with renewing interest in arcade games during the early part of the decade. Previous arcade games had often focused on co-operative play or indirect competition for high scores, but *Street*



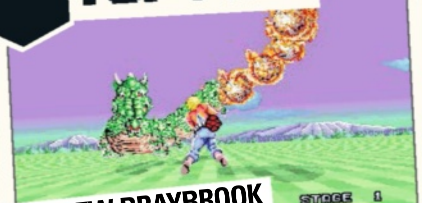


» [Arcade] *Daytona USA* was Sega's shot back at Namco's *Ridge Racer*, early games in the hardware arms race between the two companies.



» [Arcade] No matter what game you were playing in the Nineties, there was a good chance that you'd see this screen…

DEVELOPER TOP PICK



ANDREW BRAYBROOK

"We were lucky to be growing up just as arcade games started appearing, so they had a big influence on us. Today my favourite might be *Space Harrier* as it was the first game I played with a moving platform. The music was dynamic and I loved the dragon-riding bonus sections."

> "I joined Williams with the purpose of reviving the dual-stick control"
>
> Mark Turmell

Fighter II's key appeal was in standing next to your opponent as you bested them, a factor which paved the way for both the game and the wider genre to become popular in tournament play. Later in 1991 SNK released *Fatal Fury*, a one-on-one fighting game directed by Takashi Nishiyama, a former Capcom employee who had served as the director of the original *Street Fighter*. As the two companies became increasingly prolific in the genre, a rivalry developed which would last for the remainder of the decade.

As well as providing a business boost, the beat-'em-up sensation produced controversy. While the likes of *Street Fighter II* and *Fatal Fury* had been violent, they were never gory. *Mortal Kombat* quickly changed that. Though it wasn't the first game to feature sprites digitised from human actors – they were introduced in the early Eighties and popularised by *Pit Fighter* in 1990 – the combination of the graphical approach with a high level of violence and gore caused a major moral panic in the way that the cartoonish likes of *Time Killers* never could. *Mortal Kombat* would go on to be one of the key titles in the 1993 US Senate hearings on videogame violence, though largely due to its appearance on home consoles. However, the Amusement and Music Operator's Association was represented at the hearings and, along with the American Amusement Machine Association, created a parental advisory system the following year. This didn't stop the release of *Mortal Kombat II*, nor other gory fighters that appeared in 1994 such as *Bloodstorm* and *Killer Instinct*, but applied a colour-coded rating to the cabinet for all to see.

Around this time, the demise of an old technology became apparent. Laserdisc ▶

FIGHT CLUB

Mark Starkey, owner of London's The Heart Of Gaming arcade, talks to us about the competitive fighting game scene



When did it feel like developers started to take notice of the fighting game community's needs in creating games?

1994 saw the culmination of the *Street Fighter II* franchise in *Super Street Fighter II Turbo* and also the release of SNK's *King Of Fighters* series. After the overwhelming popularity of these games sunk in, tournaments were held in arcades and at some point around that time, programmers started adding 'event mode' in the operator menus to help in running them.

How did more advanced strategies spread in the days before YouTube and mass access to community websites?

The most obvious way was to go to the arcade. Watch, play, learn. Get beaten, get better. It was that simple. After all, every match was technically a 'money match', with pocket money or part time wages at stake in front of crowds.

Some people had links in the east, as the Asian community in London was huge, as was the high street market for grey imports. Some people were lucky enough to have multi system VHS players and imported tapes to help study. People with plenty of money invested in Superguns, homemade consoles capable of running arcade boards, or the Neo Geo AES. This allowed people to practice at home by dropping a huge lump sum rather than 50p coins.

With so much competition in the fighting game market of the Nineties, do you feel that any hidden gems were edged out of the scene?

Absolutely. Only recently a bunch of us were discussing how much of a shame it was that games such as *Ninja Masters* and *Breakers Revenge* lost out because they were overshadowed by games such as the *Last Blade* series. Even the *Street Fighter III* series lost out to the unstoppable popularity of the *King Of Fighters* series, and was only able to blossom after the turn of the millennium.



» [Arcade] The infamous Fatality moves caused *Mortal Kombat* to rake in both quarters and column inches.



» [Arcade] *Street Fighter II*'s success is hard to overstate – individual machines were taking in £1,000 per week.

» [Arcade] Namco's *Starblade* provides a key example of how rapidly polygon technology developed – it's only two years older than *Ridge Racer*.





» Twin sit-down racing cabinets of the Nineties were often able to be linked for increased player numbers.

DEVELOPER TOP PICK

JON RITMAN

"That's easy; *Battlezone*, and as soon as I started writing this I played it for 15 minutes. At one time in my life my place was party central and inevitably hunger would set in and someone would be sent to the local burger joint, not such a bad thing as there they had a *Battlezone* machine."

games, which had set new graphical standards when introduced in the Eighties, still seemed to be strong in the early Nineties. American Laser Games released *Mad Dog McCree* in 1990, and in 1991 Sega brought *Time Traveler* to market in an innovative cabinet which used a mirror to create the illusion of holographic projection. But by 1994, the final Laserdisc games had left the production lines, including Atari Games's *Cops* and American Laser Games's *Fast Draw Showdown*.

But while old technologies fell by the wayside, others rose to prominence. Polygonal 3D games began to hit their stride in the early Nineties – while they had existed since the Eighties, the arrival of Sega's *Virtua Racing* in 1992 would kick off a technological arms race. The game's high polygon count was achieved with the Model 1 arcade board, a joint development with General Electric Aerospace. The board would only host another five games, including *Star Wars Arcade* and the original *Virtua Fighter*, as Sega had its sights set on the next big advance – but crucially, so did Namco. The company introduced the System 22 board in 1993 with *Ridge Racer*, the first ever 3D racing game to employ texture mapping, which enabled a greatly enhanced sense of realism over the flat coloured polygons that had gone before. Sega shot back with *Daytona USA* on Model 2 just months later. But while 3D games were becoming increasingly popular, they were very expensive for developers as well as operators, ensuring that 3D games didn't become the dominant force in the industry for some time. Indeed, huge film properties like *Jurassic Park* were still being given sprite-based treatments. But by 1996 both Sega and Namco had transitioned to releasing 3D games, having learned to exploit their boards to the fullest. The rivalry between the two companies produced some of the biggest hits of the decade – Namco's System Super 22 was the technology behind *Time Crisis*, *Prop Cycle* and *Alpine Racer*, while Sega's Model 2 series ran *Virtua Cop*, *Sega Rally* and *The House Of The Dead*.

> **"I kept turning on more and more objects on the screen, and was mesmerised by the power"**
> Mark Turmell

While this was going on, home consoles were rapidly catching up to arcade technology. Namco's PlayStation conversion of *Ridge Racer* wasn't arcade perfect, but it was close enough not to matter greatly – a fact which opened the arcades up to boards based on home console hardware as a budget option. The lower power didn't necessarily equate to a lower profile, though. Namco's PlayStation-based System 12 board hosted the likes of *Tekken*, while Sega's Saturn-based ST-V gave us *Die Hard Arcade*. Atari Games even got in on the act by licensing the Atari Corporation's Jaguar hardware for Area 51 and *Maximum Force*.

These cheaper boards were very attractive to developers too – particularly those who weren't able to stump up the research and development budget needed to take on Sega and Namco. Manufacturers like Konami and Atari Games were still producing custom high-end boards to power releases such as *GTI Club* and *San Francisco Rush*, but others such as Capcom and Taito simply relied on their own PlayStation variants for their 3D releases. Other developers didn't make the leap at all. Irem left the arcade market behind in 1994 due to poor sales, followed by Data East in 1996. SNK found the transition to 3D difficult after relying on the 2D power of the Neo Geo for so long – when the Hyper Neo Geo 64 arrived in 1997 it was expensive and behind the curve graphically, causing it to die a premature death.





» [Arcade] SNK was one of the last companies on the 3D bandwagon, marketing games like *Metal Slug* instead.

It wasn't just the developers struggling to keep up. The pace at which technology was advancing meant that operators needed to invest heavily in new machines to stay relevant in the Nineties. Additionally, major attractions had become important to operators, but they came with a price. Dedicated cabinets with unique control methods like *Prop Cycle*, *Wave Runners* and *Rapid River* were great for drawing customers, but couldn't be upgraded with new kits like lightgun or racing cabinets could, leading to stagnating line-ups later down the line. Inevitably, these costs were passed on to players – the price of a credit would creep up over the course of the decade before settling around £1 for new releases.

It's ironic then that one of the great trends of late Nineties arcade gaming began with a small cabinet with low graphical power – *Beatmania*. Konami's 1997 release saw players spinning a turntable and hitting buttons on a keypad to match the notes dropping down the screen – a simple concept, but one which hooked thousands of gamers and has seen over 40 arcade releases to date. Konami, realising that it had a hit on its hands, quickly broadened the concept beyond the DJ simulator to other music-based games, introducing the similarly prolific *Dance Dance Revolution* in 1998, then *Guitar Freaks* and *DrumMania* in 1999. Other developers were taking notice, too – by 1999 Sega had given us the maraca-shaking favourite *Samba De Amigo*, Namco had introduced the *Taiko No Tatsujin* drumming series and Andamiro had introduced *Pump It Up*, a dancing series to rival Konami's *Dance Dance Revolution*. These games would initially become popular in Japan, but some canny localisation saw *Dance Dance Revolution* become a worldwide hit (albeit under the name *Dancing Stage*, in Europe).

While music games were ascending, other genres didn't fare so well. Despite the high quality of releases like *Spikeout*, scrolling beat-'em-ups were hard to come by towards the end of the Nineties, in part due to the difficulties faced by developers during the transition to 3D. Traditional shoot-'em-ups had also largely been confined to Japan, whether 2D or 3D. The advances in console technology meant that players were concentrating on the games which they couldn't get at home – and operators responded with their purchases, a fact reflected in the hits of the era. While the likes of *Crazy Taxi* and *Hydro Thunder* might have received excellent home conversions later on, it was hard to beat having a steering wheel and pedals.

By the end of the Nineties, arcades had lost their edge over mass-market home consoles, some major companies had fallen by the wayside and operators were feeling the pinch. But with the music game boom buoying the industry and hits still arriving in other genres, the outlook for the new millennium was good. Of course over a decade on, we know better – which brings us to the concluding part of our arcade history…



» [Arcade] *Time Crisis* ran on Namco's System Super 22.

KEY EVENTS

1991

■ *Street Fighter II* is released, popularising one-on-one fighting games and earning Capcom hundreds of millions of dollars in sales.

1993

■ Namco's *Ridge Racer* becomes the first game ever to employ texture-mapped polygons, a technique still used today.

1996

■ Sega opens Sega World in the London Trocadero, combining theme park-style attractions with six floors of arcade games.

1997

■ *Beatmania* launches in Japan, the first of Konami's many popular music games.

1999

■ *Buriki One* launches in Japan, becoming the final release for SNK's short-lived Hyper Neo Geo 64 board.



» [Arcade] *NBA Jam*'s success was enormous, prompting Midway to expand the formula to other sports with games like *NFL Blitz*.



MELODY MAKERS

We spoke to Paul Brookfield, the first UK Pump It Up player to qualify for the World Pump Finals, about the evolution of the arcade music game



Why did early games like *Beatmania* and *Dance Dance Revolution* have such a high impact?
Generally speaking, because they came with their own dedicated cabinets and were sound-driven games, they had a particular knack for catching attention in a row of machines. *Dance Dance Revolution* in particular also added a great blend of gameplay and physical activity, being particularly intuitive to first-time players and the double-edged sword of being humourous/embarassing to play.

What are the key considerations for developers bringing arcade music games to international audiences?
The absolute, number one rule is to make the games as unintimidating as possible. Konami's biggest music-game localisation success is without a doubt, *Dancing Stage Euromix*, which contained well-chosen licensed songs that had simple difficulty levels, which were offered to players first in the song list.

A competitive scene has developed around music games. How heavily are the needs of this audience factored into any development decisions?
Massively so. Although there is at least a moderate attempt to add low-difficulty and some licensed content to the games, the vast majority of the new instalments in the established series of music games are purely to satisfy the addicted hardcore. The *Beatmania IIDX* series is now 21 instalments old, and there are songs that on the top difficulty, have only been cleared by a small handful of people worldwide.

What are the key titles for people to play to get a grounding in the history of the genre?
I would recommend that people try the first *Dancing Stage Euromix* for a decent game that remains a shining example of a good localisation, and an instalment from the five-key original *Beatmania* series because it is the father of the modern arcade music game genre. Also, any instalment past the eighth mix for *Beatmania IIDX* for a taste of how far the series has evolved and just how truly, monstrously hard a music game can be.

END GAME

THE ARCADE AS A SIDESHOW

Nick Thorpe is your guide to an era in which the arcade industry is following gaming trends, rather than creating new ones



» [Arcade] Often, the credits display was all that visually distinguished arcade games from their home console counterparts.

THE STRENGTH OF ARCADE GAMES HAS ALWAYS BEEN THEIR ABILITY TO OFFER ENTERTAINMENT THAT YOU CAN'T REPLICATE AT HOME – BUT AROUND THE TURN OF THE MILLENNIUM, THE TECHNOLOGICAL BOUNDARIES BEGAN TO CHANGE.

Sega's primary arcade board was the NAOMI, essentially an arcade version of the Dreamcast, while Namco slowly shifted towards the PlayStation 2-based System 246. For the first time ever, the technology at the top of both home and arcade markets was the same, and dedicated arcades struggled as hardcore gamers looked elsewhere.

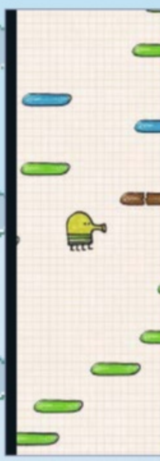
The number of arcades operating in the USA had slumped from 10,000 during the Nineties boom to just 3,000. As business conditions worsened, companies began to exit the market. Midway closed its arcade operations in the early part of the decade in order to concentrate on the home market, taking with it the recently absorbed Atari Games. In Japan, SNK's failing finances allowed it to be bought by Aruze, a pachinko manufacturer that stripped the Neo Geo manufacturer's assets and allowed it to become bankrupt. But while these companies disappeared, it's notable that new ones sprang up to replace them. "Sometimes you feel like a total dinosaur stuck in a time warp," says Eugene Jarvis, who founded Raw Thrills in 2001. "But then you go to an arcade and tap into the enthusiasm of the kids and you get massively jazzed about your next project." Meanwhile, SNK's intellectual property was quickly bought back by Playmore, a new company formed by SNK founder Eikichi Kawasaki that quickly entered the arcade market – though still reliant on the ageing Neo Geo hardware.

In an effort to retain the hardcore players, arcade manufacturers began to implement new hardware features. *Virtua Fighter 4* popularised the use of memory cards, which allowed players to track their wins and losses as well as customising their characters. Memory cards quickly proliferated across genres – from gun games like *Ghost Squad* to music games such as the *Beatmania IIDX* series, and even racing games like *Mario Kart Arcade GP*. However, international arcade operators didn't adopt the cards in huge numbers, meaning that they're still primarily found in the Asian market. Another major development was the addition of online functionality









A LONG WAY FROM HOME

Where arcade conversions once sold home hardware, in recent years you're far more likely to see arcade games using licensed products to entice players. While film licences like *Terminator: Salvation* and *Transformers* continue to do big business, you're now also likely to see familiar names from console and mobile gaming appearing in the arcade. The trend became noticeable around 2005 – while Global VR had been using EA licences such as *Need For Speed* for some time, they were joined by the likes of *F-Zero AX* and *Mario Kart Arcade GP* – takes on popular Nintendo series by Sega and Namco respectively. More recently, popular mobile games such



» Lightgun games are now one of two staple genres in the arcades.

to arcade games. Western releases such as the *Big Buck* series of hunting games often feature national high score tables and tournament features, while online multiplayer is usually reserved for Japanese games. The poster child for this approach is Sega's *Border Break*, a mech combat game that has generated over £60 million in sales since its introduction in 2009.

But the majority of arcade manufacturers today aren't making games for the long-departed hardcore gamer – they're making them for the people visiting theme parks, seaside resorts and bowling alleys. Though there are still dedicated arcades which are running at a profit, the locations that have best weathered the storm are US chains like Dave & Busters and Chuck E Cheese's, where arcade games serve as a supplementary attraction rather than the main draw. It's a simple change, but one that has required developers to adjust their development practices. "The arcade is a much more casual space," Eugene tells us, "so we have to make a game wider as opposed to deeper, and make sure every player has fun and a challenge. We have to go light on the punishment, even though it is always fun to see a player totally destroyed!"

The other major adjustment, at least as far as the Western market is concerned, has been the marginalisation of genres. Music games have suffered heavily, thanks to a combination of recession-fuelled conservatism and the boom (and subsequent decline) of peripheral-based music games on home consoles. Five new music games were introduced to the UK market at 2009's Amusements Trade Exhibition International show, but by 2013's European Amusement and Gaming International show the genre was absent and Konami, the genre's major player, was no longer providing arcade videogames to the UK. Meanwhile, traditional joystick-based games have almost disappeared. While some notable exceptions exist – *Super Street Fighter IV*, *Virtua Tennis 4* and *Pac-Man Battle Royale* have all arrived in the last few years – the market today is primarily composed of driving games and lightgun games. The result is that products are developed with those genres in mind. Where *Batman* was represented with scrolling fighters in the Nineties, in 2013 Raw Thrills adapted the licence with a driving game that harks back to the likes of *Chase HQ*.

But ultimately, that situation makes sense. "The arcade is all about physicality and human interface," Eugene tells us, and when you look at the new products to hit the market, the most successful ones hit a number of his key features – "Huge monitors, immersive racing cockpits and physical I/O like lightguns, motion cabinets, leaning motorcycles." No matter how impressive your home entertainment system, it doesn't offer domed screens, moving seats or air jets – and it probably never will. The likes of *Mach Storm* would lose something in the home, and it's this fact that ensures that arcade games remain in demand.

Despite the diminished status of the arcade in the bigger picture of videogames, Eugene's ambitions remain sky high. "Like bank robbers living for that one last job, arcade developers dream of creating the next humongous hit – the new *Pac-Man*, *Tetris* or *Angry Birds* that will catch the world on fire." Perhaps in the future, **Retro Gamer** will be telling the story of how Eugene created that new arcade sensation. We can only hope so.



» Arcade memory cards can become collectibles in their own right, featuring a variety of attractive designs.



» Lightgun games with big licences attached tend to perform well.



» [Arcade] Manufacturers now regularly utilise popular home console games to provide new products.

> **"It is always fun to see a player totally destroyed"**
> Eugene Jarvis

KEY EVENTS

2001
■ *Virtua Fighter 4* is released in August, popularising the use of memory cards in arcades.

2004
■ SNK Playmore releases its final game for the Neo Geo board in April, 14 years after its launch.

2005
■ Square Enix purchases Taito Corporation in September to enter the arcade market.

2006
■ Online coin-op news site Arcade Heroes launches in December, mixing player perspective with industry insight.

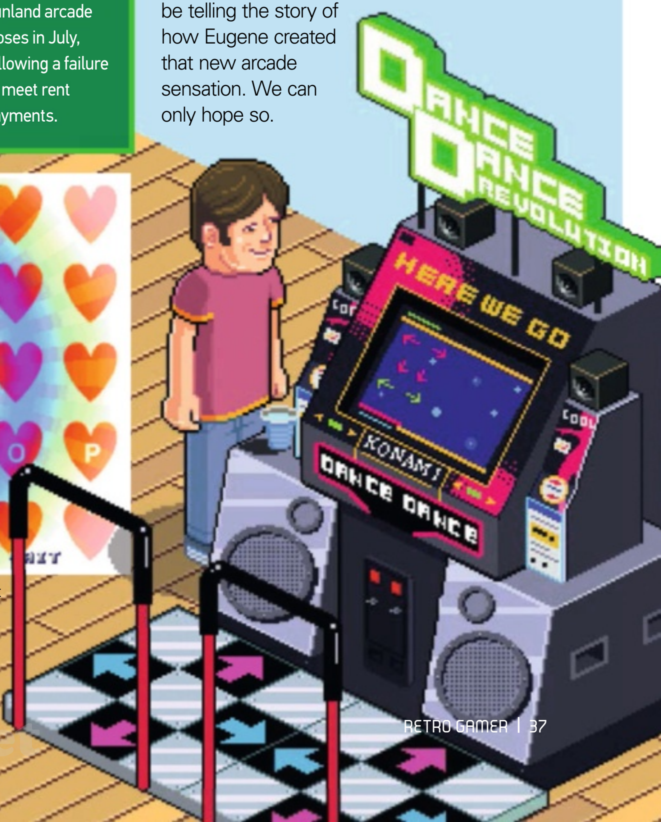
2011
■ The London Trocadero's Funland arcade closes in July, following a failure to meet rent payments.

as *Temple Run* and *Doodle Jump* have been adapted into hybrid products combining videogames and ticket redemption.

The use of home brands provides arcades with name value and often proven high quality, but the success of the conversion depends greatly on the approach taken by the arcade manufacturer. Konami's *Silent Hill* and *Castlevania* games were entirely new experiences, but proved to be heavy-handed adaptations that attempted to wedge both series into the lightgun shooter template. More successful was the *Mario Kart Arcade GP* series, which provided new content and didn't need to veer far from the design of the console games to provide a good arcade experience. The most prolific company has been Sega, whose European arcade team has worked with the likes of Sumo Digital and Codemasters to produce excellent arcade conversions of *Sonic & Sega All-Stars Racing*, *Virtua Tennis 4* and *GRID*.



» [Arcade] Music games were popular arcade attractions throughout the last decade, but lost out to home games like *Just Dance*.



THE BEST ARCADE IN THE WORLD

Funspot arcade in New Hampshire, USA, is a glorious reminder of the days when arcades ruled the gaming world. Paul Drury reports from retro heaven



WE ARE HERE!





FUN THREE

BOB LAWTON
OWNER AND FOUNDER OF FUNSPOT



■ Bob opened up the first Funspot in 1952 with his brother John, who sadly passed away in 2003. During the boom years of the Eighties, they ran Funspot arcades across New Hampshire and even as far afield as Florida.

GARY VINCENT
FUNSPOT MANAGER AND ACAM PRESIDENT



■ Gary took a summer job at Funspot in 1981 and never left. He was instrumental in creating the museum and he still spends many hours restoring old cabinets, ready to bring them onto the arcade floor.

MIKE STULIR
ACAM BOARD MEMBER



■ Mike is one of the many volunteers who devote their time to making ACAM such an extraordinary place. "I want to make sure these pieces of Americana are here for future generations to see and enjoy," he says, proudly.

BOB LAWTON PATS THE HULKING *AFTER BURNER* COCKPIT CABINET AND SMILES. "WE PAID $11,000 FOR THIS IN APRIL 1987, WHICH WAS A HUGE AMOUNT OF MONEY BACK THEN. BY 1 JULY THAT YEAR, IT HAD PAID FOR ITSELF. PEOPLE WERE QUEUING UP TO PLAY IT!"

Bob, the founder and general manager of Funspot, can talk about any of the machines in his colossal arcade – officially named the biggest in the world by Guinness World Records in 2008 – as if it were an old friend. And Bob has a lot of friends. Over 600 machines are spread across three floors and walking through the building is like taking a tour through the history of arcades. You'll spot ancient baseball flicker games, electro-mechanical machines from the Sixties, scores of pinball tables and even one of those 'Love Tester' gadgets.

There's a whole mini-golf course, too; a sweet nod to the origins of Funspot. Back in 1952, Bob, fresh from graduating with a degree in chemistry, swapped test tubes for golf clubs and built a course on the second floor of the Tarlsen building in Weirs Beach, New Hampshire, a short walk from Funspot's current home. In partnership with his brother John, the pair built up the business over the following two decades, adding rifle galleries, a skee-ball alley and numerous other arcade attractions. Then one day in the mid-Seventies, in walked an animated Italian, who began gesticulating wildly…

"He was waving his hands and saying, 'Let me get rid of all this junk and put in some good games'," laughs Bob. "He was an operator from over in Concord and the first game he brought us was *Tank*. That one machine took more than the whole room of nickel and dime games we had. It showed us what videogames were going to do. I loved that guy. We stayed with him for years!"

So Funspot rode the videogame wave from the pioneering Seventies, through the Golden Age of the Eighties and into the last real hurrah of arcade cabinets in the Nineties. And they're all still here for gamers to enjoy. Classics like *Robotron* and *Asteroids*, obscurities such as *Space Fury* and *Quantum*, monsters like the *G-Loc* full-motion 360 cab and a row of linked-up *Daytona USA* machines.





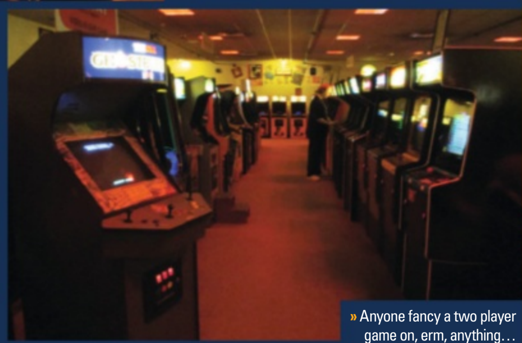
» Cabinets as far as the eye can see.



» Bob Lawton (far right) regales his nephew Steve (centre) and RG's Paul Drury with tales from the arcade business.



» They just don't make upright driving cabinets anymore…



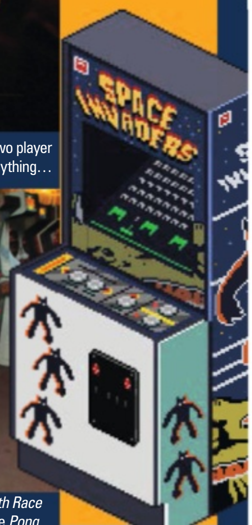
» Anyone fancy a two player game on, erm, anything…



» ACAM boasts over 300 cabinets, from old favourites to real rarities.



» Controversial game *Death Race* coexists with the inoffensive *Pong*.



We may be spoilt these days by having access to all these titles via downloads and emulation, but nothing beats the thrill of playing your favourites on an original cabinet in their natural arcade habitat – a habitat that has sadly almost vanished.

"I was noticing classic games were disappearing and arcades were disappearing," explains Gary Vincent, general manager and part of the Funspot family for over 30 years. "So at a staff meeting in September 1998, I asked if I could gather all the older games together, like a museum to celebrate the history of gaming."

Gary's idea slowly evolved into the American Classic Arcade Museum, or ACAM for short, a superlative collection of over 300 classic arcade games housed on the top floor of Funspot. Walking along the aisles of cabinets, admiring a pristine *Death Race*, smiling at the *Pac-Man* machine on which Billy Mitchell famously (or infamously, if you know the back-story) achieved his 'perfect game' and stopping for a sit-down on *Buck Rogers* is a magical experience. Even the lighting, décor and background music has been lovingly chosen to recreate the arcade as it was in its Eighties heyday. "It brings back memories of when I first started here," says Gary, wistfully. "All the sights and sounds I remember from my first summer working here in 1981. It's kinda cool."

"Gary's a visionary," enthuses Mike Stulir, who sits on the board of directors of the museum. "He can recognise good ways to entertain and inform the public. We have students from computer development programmes use us as a resource. One college eliminated one of their course textbooks on the basis of what they could learn from us. Last time they visited, they brought three busloads of students to come and find out about gaming in the old days!"

Who said learning can't be fun? Whether you want to explore the history of videogaming or simply enjoy playing all the machines that consumed your pocket money as a child, ACAM is an essential visit for retro gamers. It's open all year round, though you may want to consider visiting during its annual International Classic Videogame Tournament in late May. Now in its 16th year, the event attracts the cream of arcade gamers from around the globe, meaning you can test your high scoring skills against numerous world record holders or at least grin as you spot famous faces from such films as *King Of Kong* and *Chasing Ghosts*.

When you do get to finally walk through the hallowed doors of this gaming mecca, make sure you check out the 'Retro Gamer Wall', where you'll find past articles on Funspot taken from our pages, and then seek out Bob Lawton himself and say we sent you. Despite being in his 80s, Bob still opens up the arcade every day and always provides a warm welcome. "I just love working," he laughs over a beer in the arcade's DA Long tavern, named after his grandfather. "My family all work here, too. It's my life!"

For more on this marvellous place, see www.funspotnh.com.

MUST PLAYS

COMPUTER SPACE 1971

■ This is where it all started. Inspired by the mainframe game *Spacewar*, Nolan Bushnell and Ted Dabney created their own simplified version, which became the first commercially produced cabinet. This sleek cabinet looks impressive, especially sat opposite Atari's *Pong*.



INDY 4 1976

■ This imposing four-player racing game greets you at the top of stairs as you enter ACAM and it's a poignant reminder of the arcade's long history. "It was the third videogame we got after *Tank* and *Seawolf* and during the summer of 1976, it was taking $140 a day," smiles Bob.



DOMINO MAN 1983

■ An excellent example of creative cabinet design, this game features a moustached, balding artist, who would soon swap his dominoes for beer mugs in *Tapper*. One of the many donations to the Museum since its official launch in January 2000, this one came from Randy Lawton, Bob's nephew.



WACKO 1983

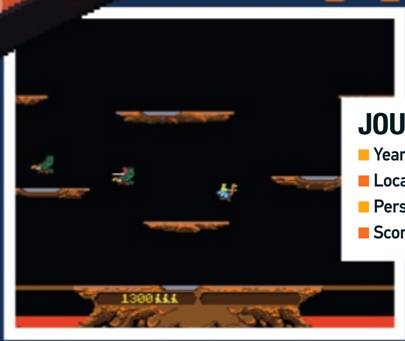
■ No, you are holding the magazine correctly. "This is from that era when manufacturers would do anything to make their game stand out," remembers Gary. "It must have cost lots more to make it crooked like that. I love that people went the extra mile with a bizarre cabinet like this."



SPACE HARRIER 1985

■ A compelling reason for why nothing beats playing a game on the original hardware, this full-motion cockpit cabinet tosses you through the Fantasy Zone with gay abandon. Modelled here by *Missile Command* champ Tony Temple, who put his back out shortly afterwards. Is the game worth the injury? Yes.





JOUST
- **Year Made:** 2012
- **Location:** Seattle, WA, USA
- **Person:** John McAllister
- **Score:** 107,301,150



ASTEROIDS
- **Year Made:** 2010
- **Location:** Renton, Washington USA
- **Person:** John McAllister
- **Score:** 41,338,740



ROBOTRON
- **Year Made:** 2009
- **Location:** Renton, Washington USA
- **Person:** John McAllister
- **Score:** 1,236,950

DEVELOPER TOP PICK



GARY BRACEY

"It was always Donkey Kong for me. The first game that really got me hooked into videogames... and one which I spent a fortune (and many hours) on!"

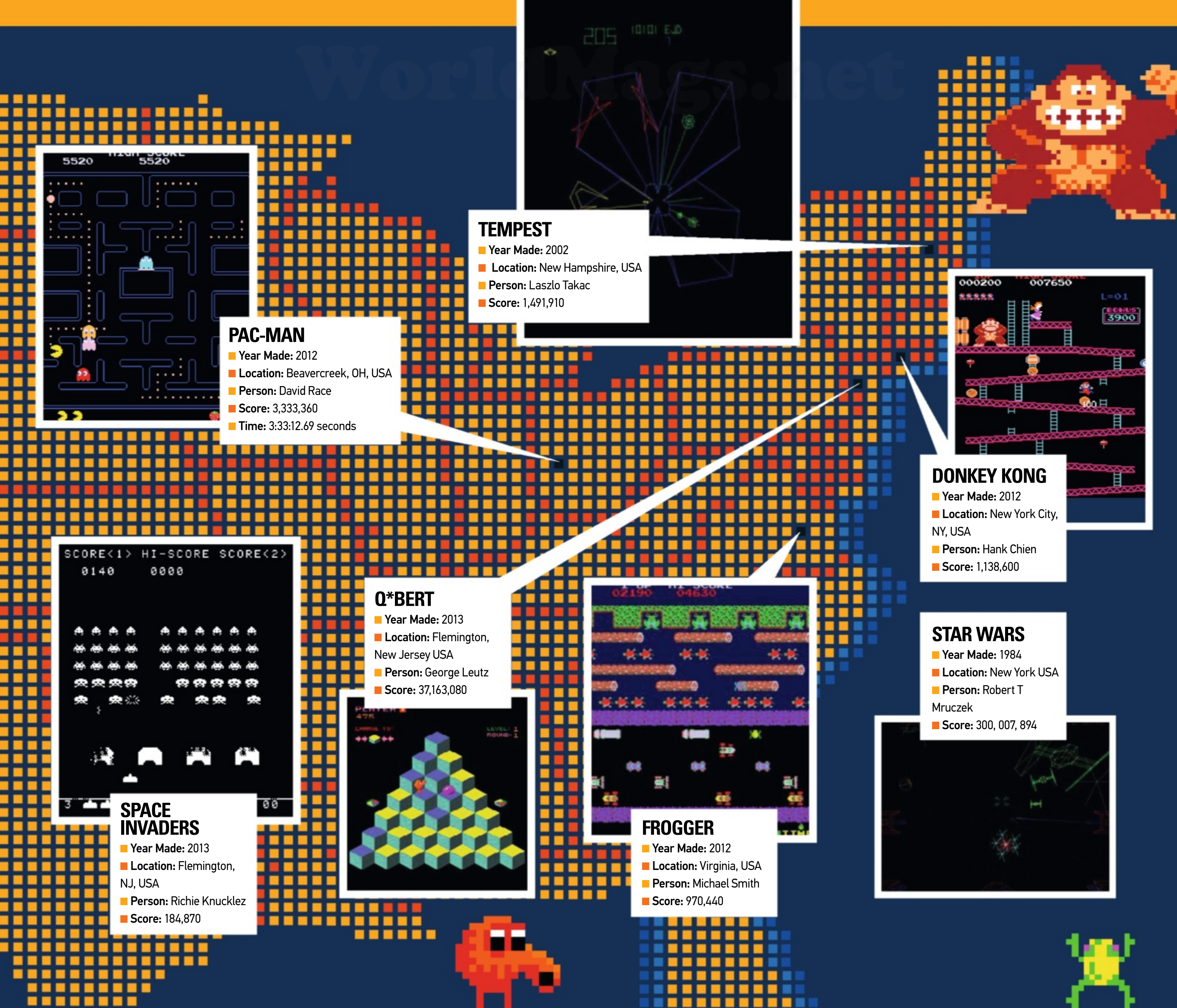
SCORE KILLERS

Walter Day tells **Retro Gamer** about Twin Galaxies and the birth of score attacking

Why did you decide to travel America collecting high scores?
I loved playing videogames so much that I opened an arcade as an excuse to be able to play more and more videogames. It was called Twin Galaxies and it opened on 10 November 1981 in Ottumwa, Iowa. I practice Transcendental Meditation every day and, like many people who practice TM, I noticed increases in my mental clarity and eye-hand coordination. So, I was already very open to the idea that the best gamers would be people who were using more of their latent mental capacity and it would express itself in terms of higher and higher scores achieved in competitive gaming. So, I went on a personal quest to find the greatest gamers, the ones who could merge into a sort of higher-state of consciousness and out-think the program. And, such people would be recognisable by their unprecedented scores and unmatchable skill set.

When did you realise that the general public was interested in high scores?
In 1982 a local gamer named Tony Mattan showed me a copy of the January edition of *Time* magazine. It had a cover story on videogames sweeping the world, and in the story was mention of one Steve Juraszek of Illinois who had scored 15 million points on *Defender*. Not surprisingly, the public was viewing this as the world record and people all over America were bent on breaking Juraszek's score. I allowed Tony Mattan to make a world record attempt and he did last for 24 hours, scoring about 24 million points. But, to my surprise, during his marathon the media began to call from far away cities like Kansas City, St Louis, Des Moines, Atlanta and Chicago, wanting updates on Tony's progress. This was only the beginning. Interestingly, as more and more high-score attempts began to manifest, Twin Galaxies would invariably be a part of each story in the media as we would be the adjudicators of the event. A media expert once estimated that Twin Galaxies was in the news more than 10,000 times during the 1982-1986 era, concluding that on any given day during that time there was someone going for a world record on a video game and the media was covering it.

How did you go from an oil broker, to a comedian and then owner of Twin Galaxies arcade? That's quite a trajectory.
Jon Bloch and I used to do Vaudeville-like skits, performing sporadically in the Catskills (Upper State New York) and in Iowa. And, also, I was an accomplished Rag Time Piano player, appearing on posters in the Eighties. Then, during the Spring and Summer of 1980, I was working in downtown Houston as an oil broker, creating deals between the majors (Conoco, Exxon, Tenneco) and the traders (Tesoro, Tosco and Apex). It was here in Houston that I found videogames as my true love and the first seed of desire was planted to someday own my own arcade.



How did it feel when Twin Galaxies was recognised by *The Guinness Book Of World Records*?

It happened in the summer of 1983. They had never recognised games because they were intimidated by the mass of details and variations in games and gameplay, acknowledging that it was a field that they were reluctant to try and master. So, they relied on our expertise. Our contests and adjudication supplied them with all their scores for the 1984, 1985 and 1986 books. And, then later, the 2008, 2009 and then much of the first four or five Gamer's Editions.

What's the ultimate arcade game for score chasing and why?

There are numerous games that test a man's soul. And, they are so difficult that it takes a major amount of practice and luck to raise your high score even 1,000 more points. They are all played on Twin Galaxies Tournament Settings (which means you get only a total of five men). They are *Robotron*, *Defender*, *Stargate*, *Q*bert* and *Missile Command*. And, of course, there is *Donkey Kong*, the most legendary contest game of them all.

When do you feel the golden period for scores was and why?

The Golden Age of High Score Competition lasted from 1980-1985. After that time, there were fewer arcades available and very few promotions or contests. By then, little inspiration remained to be a high-score champ.

What's the most impressive high score endurance test you've witnessed?

Recently, George Leutz, of New York City, lasted about 85 hours on one quarter, playing *Q*bert* to a new world record, eclipsing a record that had stood for more than 30 years.

Why did you leave TG and do you regret it?

I want to focus on the educational and historical aspects of our gaming legacy by creating a set of videogame trading cards that commemorate the history of the global videogame culture, honoring the iconic industry pioneers, the legendary game designers, the celebrated world champions and the historic milestones and landmark events. Plus, I am writing a musical based on my experiences running Twin Galaxies back when the City of Ottumwa became the "Video Game Capital of the World (1981-1984)." These new projects have me excited so I don't miss running TG.

Is it disappointing to see all your hard work currently undone?

TG is about to start up again under new leadership. So, all is well in the Video Game Capital of the World.

A MOMENT WITH...



BOBBY KING

LEAD DESIGNER AT FARSIGHT STUDIOS

Who is BOBBY KING?

THROUGH HIS WORK AT FARSIGHT, BOBBY KING HAS BECOME INSTRUMENTAL IN CONVERTING REAL-LIFE PINBALL MACHINES INTO DIGITAL ONES, PLAYABLE ON PLAYSTATION 4

What's your earliest memory of a pinball machine and where did you see it?
My earliest memory of playing a traditional pinball machine was in a candlepin bowling alley in the early Eighties while growing up in Massachusetts. I remember playing *Black Knight* and *Haunted House* there, so it was probably one of those two.

Before that, I remember playing a Williams baseball-themed bat game at a campground my family visited in the Seventies. I really enjoy a well-designed bat game. I have a dream that we'll eventually add one as a novelty machine to the *Pinball Arcade*.

Why do you think pinball machines were so popular in the Seventies and Eighties?
With all due respect to some great EMs of the Seventies, the introduction of solid state did a lot for the gameplay experience. Programming deeper rule sets as well as adding better audio and light sequencing was much easier than it was before. This led to serious competition from Williams, Bally, Gottlieb and Stern – the amount of quality tables really took off.

How long have you been converting classic pinball tables now?
Farsight has been re-creating pinball tables digitally on console with System 3 for almost 12 years now. We started with *Pinball Hall Of Fame*. Personally, I've been working on our pinball sims since we started with my primary gameplay contribution being physics design and tuning.

What do you find is usually the trickiest thing to emulate?
A chipset we're new to is usually full of tricky issues we need to overcome. There are always lots of things to work out, but I'd say that getting the audio working properly is the thing that always takes the most time.

What does the PS4 version offer over previous versions of the game?
The PS4 version is our first release to include dynamic lighting – real-time light sources casting illumination from the many bulbs on a table onto the 3D geometry around them. We've also been gradually improving gameplay physics and fixing bugs. The PS4 Blu-ray Disc also introduces Challenge Mode exclusively on the retail version. This feature allows players to progress through all of the tables in the game in a fun and challenging way.

How does the enhanced power of the PS4 help pinball emulation?
Mainly it allows us to improve the visuals quite a lot. This enhances the gameplay experience. The power of the CPU should also allow us to emulate more processor intensive chipsets down the road.

How will high scores be handled on PS4? Is there Facebook integration?
PS4 will tie into our leaderboards with PSN authentication. This is coming in a patch that we'll be submitting soon. We also have plans for adding better Facebook features such as friends list integration into leaderboards and online head-to-head play in a future patch.

You're currently working on *Season 3* tables. Any plans for *Season 4*?
Absolutely! As long as sales stay strong enough, we'll keep adding tables!

What tables would you still like permission to convert?
The are a lot of licensed tables we'd love to do – *Addams Family*, of course, *Indiana Jones Pinball Adventure*, *Dr Who*, *The Shadow*, *Pirates Of The Caribbean*, *LOTR*, *Dracula*, *Simpsons Pinball Party*, *Metallica*, *AC/DC*, *Guns And Roses*, *South Park*, *Big Bang Bar*, the new *Star Trek* table. There are quite a few actually. Our list of licensed tables we still want to add includes about 50 tables!

Will you attempt to license newer tables like *The Wizard Of Oz*?
Yes, we love the idea of adding [that] and *Jersey Jack* tables to the *Pinball Arcade*. We're working on it!





» [Left] *Pinball Arcade* running on its new friend, the PS4.

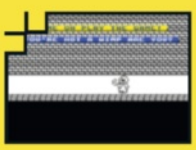


» [Right] Bobby (second from left) with some of his Farsight compatriots.

JACK THE NIPPER

Developer Greg Holmes got his big break from Jack The Nipper and created a comic strip in videogame form. Rory Milne learns how Greg met Gremlin Graphics and created a little monster





IN THE KNOW

» **PUBLISHER:** GREMLIN GRAPHICS

» **DEVELOPER:** GREMLIN GRAPHICS

» **RELEASED:** 1986

» **PLATFORM:** ZX SPECTRUM, C64, AMSTRAD CPC, MSX

» **GENRE:** PLATFORM PUZZLER

During the early Eighties, Britain's popular press sold the idea that brainy school kids all over the country were being paid a small fortune to create computer games. The most successful ones even drove flash sports cars – or so the stories went. And while there was a certain amount of truth to the phenomenon that the tabloids were reporting on, some developers of the time simply didn't fit their narrative.

"I was 26 when it was published, and all the other people around me were these whizz kids just out of school," says Greg Holmes of his breakthrough title *Jack The Nipper*. But the story of Greg's naughty toddler starts some five years earlier and in a venue far from any classroom. "I was working nights in a large shipyard," Greg begins, "I bought a Spectrum in 1981 and studied computing during my breaks and during any free time. You have to remember that I was far away from civilisation in Barrow in Furness, there were three or four books on Spectrum assembler and Programming the Z80 by Rodney Zaks – which cost £40 then – and that was it. I left the shipyard in 1984 and sold my car and everything that was surplus to requirements – cameras, etc. I then sat in my bedroom and coded and coded ten hours a day for 18 months. I learned 6502 assembler on the BBC as the books were better, then I went back to a Spectrum."

Greg's hard labour resulted in two Spectrum titles: a platformer called *A Trick Of The Tale* and a maze game with tanks called *Podder*, both of which he planned to sell on an upcoming road trip – but not before starting preliminary work on a third title. "It was just myself, in my bedroom, and some crazy ideas drawn on the back of old dot matrix computer rolls," explains

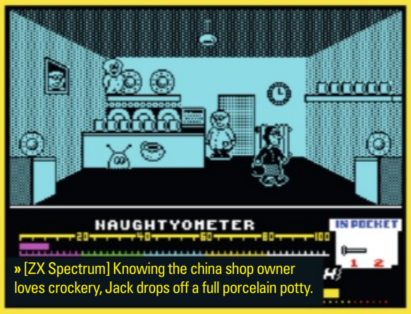


» [ZX Spectrum] Jumping on this bed may be fun, but Dad's credit card is out of reach.

Greg when asked how this third project began. "I have always read comics – and still do – and was a big fan of *Sweeny Toddler* from *Whoopee!* and *Whizzer And Chips*. I was sick of all the main characters of games being heroes and doing good and I wanted kids to be naughty because it's more fun. So that's how *Jack The Nipper* was born. *A Trick Of A Tale* was a poor *Manic Miner* clone developed to learn Z80 assembler, that was followed by *Podder*. I then started storyboarding *Jack The Nipper* and developed some sprites and mock up screens. I borrowed my dad's car and spent a few days travelling around north-west games companies – Ocean and some others I can't remember, it was nearly 30 years ago. After receiving many 'We'll let you knows' I ended up – rather despondently at this point – at Gremlin, my last port of call before heading home. As they thought I showed promise, they asked me if I had any other ideas – something the other companies hadn't bothered asking – so I pitched *Jack The Nipper*. Gremlin asked me to continue, albeit unpaid, but with the hope of publishing."

On the basis of this gentlemen's agreement, Greg assigned his sister's boyfriend and his brother minor creative roles before briefly picking the brains of Gremlin's salaried staff. "I spent a couple of days at Gremlin early on in the development," Greg recalls, "Shaun Hollingworth, Pete Harrap and Chris Kerry gave me some pointers. They wouldn't tell me all their secrets but hinted at what to do and I worked the rest of it out myself. But all the sprite routines were based on the help I was given by the lads. My younger brother John – who was in secondary school at the time – helped me along with some graphics and we bounced ideas off each other. Nick Corran, who was my sister's boyfriend at the time, and a musician, came up with the tune. The game was written from scratch in Z80 Assembler. I designed the whole thing, wrote the code, all the graphics, screens, maps and sound effects myself. It took bloody ages to do that whistle!"

Jack's memorable whistle wasn't the only time-consuming aspect of the game's development, though, as Greg reveals. "I started with a single Spectrum and tape recorder and used Zeus Assembler. I developed the game code in three parts which all linked to one another as Zeus resided in memory below 32,768 and each of the three blocks of source code were above – and built 4K of finished code – so there was a lot of faffing about. As development progressed and Gremlin became more comfortable with what I was demoing every few months they gave me an Opus disk drive and that really speeded things up. The screens were drawn using a book I bought somewhere which had blank Spectrum screens laid out like a checkerboard – 32 across by 24 down. So I drew all the screens and built the drawing routines from that. Initially I used pencil and paper to draw the sprites then typed in all the numbers – like an idiot. However, I thought there must be an easier way and I used Melbourne Draw for all the on-screen graphics, sprites and masks and wrote a series of routines to pull them from the screen into the memory areas formatted ▶



» [ZX Spectrum] Knowing the china shop owner loves crockery, Jack drops off a full porcelain potty.



» [MSX] Greg Holmes and Pete Harrap ported *Jack The Nipper* to the MSX in a morning.



DEVELOPER HIGHLIGHTS

WANTED: MONTY MOLE
(PICTURED)
SYSTEM: ZX SPECTRUM, C64
YEAR: 1984

THE WAY OF THE TIGER
SYSTEM: ZX SPECTRUM, C64, C16, AMSTRAD CPC
YEAR: 1986

TRAILBLAZER
SYSTEM: C16, COMMODORE PLUS/4, VARIOUS
YEAR: 1986



» [ZX Spectrum] Shaun Hollingworth's *Grumpy Gumphrey* was a big influence on *Jack The Nipper*'s faux-3D locations.

BYTE-SIZED BABIES



HERBERT
■ The Offspring of Wally and Wilma Week, little Herbert first found fame in Mikro-Gen's classic arcade adventure *Everyone's A Wally* before going on to star in *Herbert's Dummy Run* and play a supporting role in *Three Weeks In Paradise*.



BABY JO
■ French developer Loriciel's Tex Avery-style baby appeared in a whimsical scrolling platformer titled *Baby Jo In Going Home*. This baby-themed game had Jo throwing rattles at his foes, collecting fresh nappies and drinking bottled water.



CHUCK JUNIOR
■ Before *Tomb Raider*, Core Design was best known for its popular *Chuck Rock* series, the second of which was called *Chuck Rock II – Son Of Chuck* and featured the prehistoric exploits of a club-wielding baby called Chuck Junior.



BABY HEAD
■ Nineties brawlers often made little sense. Take Capcom's *Captain Commando*, for example, which features Baby Head – a two-year-old fighter who pilots a robot that punches, kicks and shoots its way through futuristic battlefields.



BABY MARIO
■ You can't talk about videogame babies without mentioning Baby Mario, especially since the little tyke has likely made more appearances than any other toddler in gaming. His first outing was in the essential SNES platformer *Yoshi's Island*.

▶ the way I wanted them. Because of the big sprites I had to use illegal Z80 instructions because I ran out of registers. I had read an article in *Personal Computer Weekly* on this and then applied it to the sprite routine and that took some getting your head around. I also had to design the screens a certain way to allow objects to smash when they were dropped."

As he made progress on the game's coding and graphics, Greg fine-tuned the title's mechanics and gameplay and worked out the devilish pranks that Jack would perform. "I liked the way *Grumpy Gumphrey* had turned out, I felt that its semi-3D effect really captured the idea of a comic on the screen," reasons Greg, "so I used that idea in *Jack The Nipper*. Part of the gameplay was to be naughty and avoid being chased so the game needed the in-and-out-of-the-screen movement to be able to avoid everyone. I came up with many of the pranks but some were lifted from *Sweeny Toddler* stories – like the prisoners being released. However the cat and horn was stolen from a favourite *Looney Tunes* cartoon called 'No Barking' where a dog barks and scares a cat up to the ceiling."

With work nearing completion on *Jack The Nipper* and it owing so much to the comic strip *Sweeny Toddler*, Gremlin unsurprisingly looked into the idea of adapting Greg's work into a licensed version of the then-popular comic character. "We did look into it, but it was thought that extra time and cost would be incurred, not only from the licensing but also from IPC wanting to *change* things," Greg remembers. "As the game was fully formed we really didn't see the need. By the time it came to publish I was given a job at Gremlin and worked with Pete Harrap who created the loading screen."

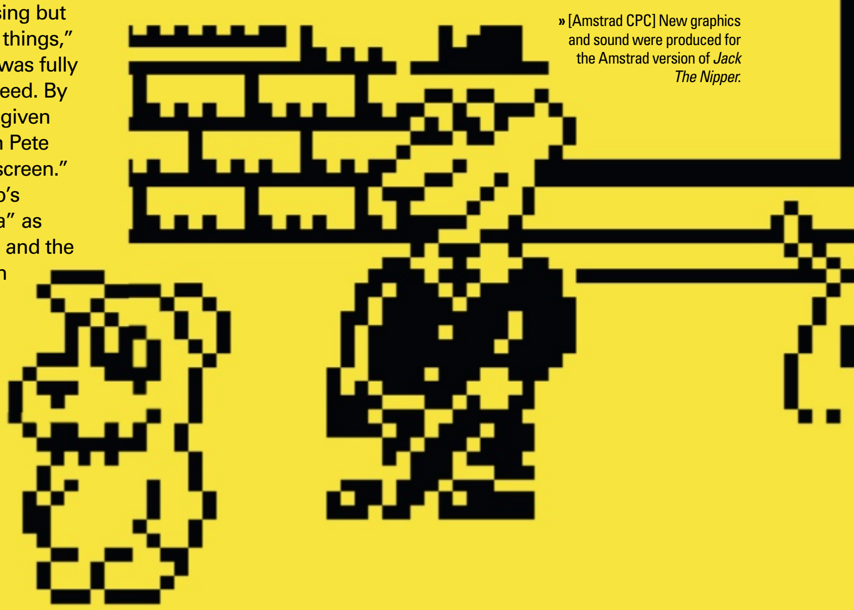
By way of in-jokes, Pete Harrap's loading screen credited "Nick Laa" as musician rather than Nick Corran and the finished game included a location familiar to everyone at Gremlin. "Nick was from Ellesmere Port and was a 'scouser' and used to call everyone 'La', so that's



» [C64] The C64 port saw Greg Holmes working with coder Jason Perkins and artist Mark Rodgers.



» [Amstrad CPC] New graphics and sound were produced for the Amstrad version of *Jack The Nipper.*



CAUSING CARNAGE



1 Remembering his mum's advice that it's important to eat your greens, the ever thoughtful Jack makes good use of his peashooter to make sure a passing shopper gets at least one of her five-a-day.



2 Jack's only a toddler, so you can't really blame him for not knowing that stuffing a huge battery into Just Micro's mainframe might cause a short-circuit and blow up all the computers in the shop.



3 Having killed all the flowers in the park with weed killer *borrowed* from the florist, Jack attempts to make amends by using fertiliser from the graveyard to produce man-eating zombie flowers.



4 Knowing that Dad uses adhesive to keep his teeth in place, Jack tries to help out at the denture factory by dropping a giant pot of superglue onto a conveyer belt loaded with false teeth.



5 Noticing that the owner of the sock factory is run off his feet packaging footwear, Jack kindly drops a heavy weight on the production line. It's hardly his fault that this destroys the sock machine.

the reason," says Greg, with a grin. "Just Micro was the computer shop set up by Ian Stewart and Kevin Norburn – who set up Gremlin – so I put the shop into the game."

With the game finished and the title's loading screen in place one final task remained; *Jack The Nipper* needed box art, which Gremlin boss Ian Stewart had the final say over. "I was really cheesed off with the look," Greg scowls, "Gremlin used a local firm to create the cover art who didn't really understand where I was coming from. I wanted the whole box art to feel like a comic and wanted it to read like a comic-strip. They created this awful little kid who looked nothing like Jack The Nipper – who was a bald baby. However, Ian Stewart thought it was great so that's what we ended up with."

Although disappointed by its front cover, Greg was far happier with the critical response his game received. "It was like a dream come true," Greg enthuses, "Ian Stewart was particularly pleased as it was released at the same time as the first really big licensed arcade game, *Ghosts 'N Goblins*, and *Jack The Nipper* made the front page of *Crash* – not it. Also for your first game, getting that acclaim was amazing. It made all the effort worthwhile, and I was then able to pay off my debts with the royalties as I'd exhausted my funds and had to borrow from my parents to keep going."

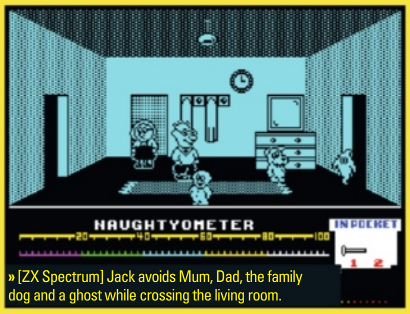
Jack The Nipper's success on the Spectrum inevitably led to versions for other popular systems, all of which Greg had a hand in producing. "Pete Harrap and I ported the Amstrad version which took quite a while if I remember as we had to redo the graphics and sound," Greg recollects. "However, believe it or not, we converted the MSX version in a morning. We took my source code and imported it into the Gremlin development system, which was a 68000-based Pinnacle 'mainframe' computer with Wyse terminals used to code with. Pete knew the architecture of the MSX so we had only to change the screen, sound, keyboard and joystick routines. The rest of the Z80 code didn't need changing. As for changing the graphics, the MSX only sold about 2,500 copies at the most so the return on investment was not enough to re-draw them. For the C64 version, I worked with Jason Perkins and Mark Rogers and gave them all the screen setups and graphic layouts. I helped with the way the game worked, but Jason did most of the coding and Mark the screens and graphics."

But as well as demand for ports of Greg's game, the popularity of *Jack The Nipper* also created a couple of problems for Gremlin. "There were two secretaries – Sue and Sarah – who were deluged with calls, so I had to produce a list of tips such as 'Get the key to open the radiator in the museum.' The girls were great, there wasn't any hassle, just more mickey-taking than normal. For the music we used Wham! The Music Box, as I liked the way it produced two-channel sounds. However, Ian Stewart wasn't happy a couple of weeks after *Jack The Nipper* was released when the author made him pay £200 for its use in the game."

When asked how he feels about *Jack The Nipper* now, Greg makes it clear how fond he is of his creation and concludes with a suitably cat-unfriendly regret. "I do feel proud. I work in IT now, and what's really unusual is that I meet people in their twenties and thirties who played *Jack The Nipper* as kids and had no idea it was written in their home town of Barrow in Furness. In hindsight, if there's one thing I would change about the game – I would have made the cats move quicker!" *

Many thanks to Greg Holmes for his time, answers and fascinating anecdotes.


» [ZX Spectrum] The naughtyometer reads zero, but the day is young and Jack's just found his peashooter!


» [ZX Spectrum] Jack avoids Mum, Dad, the family dog and a ghost while crossing the living room.


6 Ah, home sweet home – how boring. Thankfully, Jack decides to liven up the sitting room for Mum, Dad and the family pooch by scaring his pet cat skyward with a deceptively loud horn.


7 Visiting the computer factory with a disk marked "Virus" tucked in his pocket, Jack finds a system that the disk fits. This brings production to a standstill, but Jack can't read so technically he's innocent.


8 Being pretty certain that no-one in the laundrette told him *not* to fill the machines with a jumbo-size pack of washing powder, Jack feels that all the shouting and name-calling is entirely unnecessary.


9 Unable to reach the ATM – even on tiptoes – Jack jumps at the hole in the wall in order to insert a dodgy credit card. The machine breaks, but Jack's just encouraging more people to save.


10 Taking an unattended bomb to the police station seems sensible. Dropping it in the cells blows the doors off and frees the criminals, but Jack wasn't to know that would happen – he's only a nipper!

Minority Report

Special: ColecoVision

The ColecoVision was arguably the biggest casualty of the North American videogame crash. Noted for its great arcade conversions, Kieren Hawken looks a bit deeper into this system's library to find some hidden gems





» [ColecoVision] The gorgeous title screen gives a good impression of what is to come.

NOVA BLAST

■ DEVELOPER: IMAGIC ■ YEAR: 1983

■ **Imagic's *Nova Blast* really took us by surprise.** At first it seems to be nothing more than just a rip-off of the classic Williams arcade game *Defender*. In fact it's much more than that and actually combines elements of Atari's *Missile Command*, along with a few features of its own, to create a winning formula.

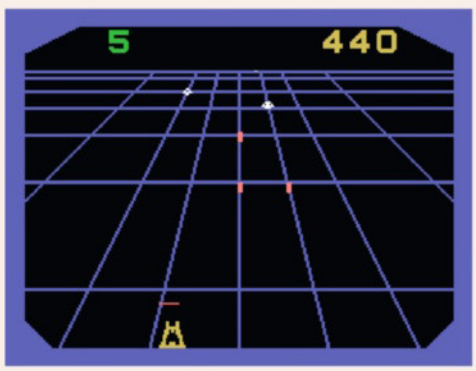
Red Alert! The four capsuled cities of the water planet Hydron are under fierce enemy attack. You must pilot Nova 1, the last of the Novon fleet, over the turbulent seas. Blast Orion Fighters, Gravitines and six other types of airborne aliens before they obliterate the cities or damage your ship. It's an admittedly cheesy plot and sounds like an instantly forgettable blaster, but bear with us. Like *Defender*, the game is played out like a horizontally scrolling shoot-'em-up with your ship being able to fly in both directions. You are also equipped with a laser weapon as well as bombs, but unlike Eugene Jarvis's game these bombs are dropped from the bottom of your craft, more akin to *Scramble*. This is so you can take out the flying aliens in the sky as well as the ships and submarines in the water below. Another feature *Nova Blast*



» SUPER CROSS FORCE

■ DEVELOPER: SPECTRAVIDEO ■ YEAR: 1983

■ **The original *Cross*** was a very underrated space shooter for the Atari 2600 by Spectravideo, best known for making the best-selling *Quickshot* range of joysticks. This sequel of sorts takes that same great game and beefs it up a bit. There are greatly improved graphics and sound as well as more enemies to dispose of. The key feature of *Cross Force* is the two cannons, one at the top and one at the bottom, that you move left and right along the edge of the play area. When you press fire they shoot in tandem with the shots following the same axis, anything caught in the middle is obliterated! A fun, entertaining blaster.



» BEAMRIDER

■ DEVELOPER: ACTIVISION ■ YEAR: 1983

■ **Activision released a** multitude of outstanding games in the early Eighties, but one of the titles you rarely hear talked about is the excellent *Beamrider*. This is a shame, because we have always felt that it's a real gem in Activision's extensive library. Like many of Activision's earlier games it borrows from other arcade classics, in this case Konami's *Juno First* and Atari's superb *Tempest*. You move back and forth along a 3D perspective grid taking out the enemy as they come towards you before using your missiles to destroy the mothership and move onto the next level. *Beamrider* is fast, furious and fun – everything that a good shooter should be.



» PIT STOP

■ DEVELOPER: EPYX ■ YEAR: 1983

■ **Epyx is best** known for its 'Games' series, *Impossible Mission* and the Atari Lynx, but in its early years it also created this excellent driving game. This was probably the first racer on the market to provide the elements of realism we would take for granted in the genre. Your car retains damage that needs to be repaired when you pit stop, which is in itself a nice touch. It even shows you what parts of the car are damaged by changing their colour. *Pit Stop* also features an on-screen map of the track you are racing on and requires you to refuel your car mid-race. It's no slouch in the speed department either!



» [ColecoVision] Enemies attack from outer space, how original!



» [ColecoVision] You are awarded a bonus for every city that you save from destruction.



» ABOUT COLECOVISION

- Coleco stood for Connecticut Leather Company, an unlikely entrant into the videogame market that was founded in 1932.
- Launched in 1982, the ColecoVision was based on the MSX standard with only a few minor changes made to the original design.
- It sold over 1 million units in six months before the North American videogame crash kicked in. Total sales were just over 2 million when it was discontinued in 1985.



borrowed from *Defender* is the scanner at the top of the screen that shows you where your enemies are.

Next we have the elements from Atari's *Missile Command*, which are far more subtle. In fact they probably owe more to Imagic's own clone of Dave Theurer's classic – *Atlantis*. In the ocean below are the four cities mentioned in the plot, each one covered in a bubble. You must protect these cities from the invading aliens at all costs. If all the cities get destroyed then it's game over and you failed your mission. Your ship has an energy bar that depletes every time you are hit, once this is gone then it's the end of the game. But, in one of the more unique features of *Nova Blast*, there are hydro power stations in the water that can be used to recharge. You simply hover above them and hold down the fire button and it will restore a portion of your energy. While you are doing this though it leaves you open to attack, adding a nice risk and reward element to the entertaining game.

Nova Blast looks absolutely gorgeous – it's definitely one of the best looking games on the ColecoVision. Even more impressively it has super-smooth scrolling, something you don't see too often on this machine. Imagic also did a good job with the sound effects and, along with all the nice little touches like the mission names and presentation screens, it all adds up to make an absorbing and challenging shooter that you will be playing for a long time to come.







» [ColecoVision] The rising cost of energy is no concern when you have a planet to save!



» FLIPPER SLIPPER

■ DEVELOPER: SPECTRAVIDEO ■ YEAR: 1983

■ **This strangely-titled** game is every bit as wacky as its name suggests. *Flipper Slipper* is a unique mix of *Breakout* and pinball that is very addictive and hugely fun to play. At the bottom of the screen you have two semi-circular paddles that move in parallel, a bit like the trampolines in *Circus*. You use these to bounce the ball into the various targets above you. The shape of the bats means that the direction the ball flies off in is much more random than you would usually expect. You also have to gauge which paddle to use to deflect the ball. Hard to explain and best played, *Flipper Slipper* is a real winner.



» SIR LANCELOT

■ DEVELOPER: XONOX ■ YEAR: 1983

■ **It seems that** a lot of the games on the ColecoVision are based on other popular titles of the time. But it also seems that they usually add enough to them to make them enjoyable games in their own right. *Sir Lancelot* by Xonox is another such example. This one plays much like *Joust* but changes it up a bit. On the first level our hero uses his flying horse to defeat the other knights. Then on the second screen he must rescue Guinevere from a flying dragon. The game then moves on to similar levels in different settings with ever-increasing difficulty. *Sir Lancelot*'s nice graphics really add to the charm.



» PEPPER II

■ DEVELOPER: EXIDY/COLECO ■ YEAR: 1983

■ ***Pepper II*, while** not known that well by gamers at large, is a firm favourite among ColecoVision owners and it's easy to see why. This is a conversion of a fairly obscure arcade game that borrows elements from Konami's classic *Amidar*. There was actually no *Pepper I* and the title refers to the split personality of your character, who can change between an angel and a demon. The idea of the game is simple, to 'zip up' all the sections of each level and reveal all the bonuses. *Pepper II* is a classic old-school arcade maze game that will keep you coming back again and again for just one more go!

Minority Report

MR DO'S CASTLE

■ DEVELOPER: PARKER BROTHERS ■ YEAR: 1983



» [ColecoVision] Life is a bowl of cherries according to Mr Do, but he would say that.

■ **Everyone knows what a great game the original *Mr Do!* is. It's a classic digger that also received a very fine conversion to the ColecoVision, but people rarely talk about this equally fantastic sequel.** This time Mr Do doesn't have to worry about getting his clown outfit dirty as he is safe and dry in the Unicorn's castle. Well, we say safe, the unicorns themselves are not particularly happy about him being there it seems! So Mr Do must grab all the cherries, knock out the unicorns and escape from the castle intact.

Taking the form of a traditional one-screen platformer, you use the ladders to move around the castle and your trusty hammer to defeat the baddies. But you can't just hit them; it's not that easy, you must smash the sections of each platform so they fall onto a unicorn below. The valuable cherries are also hidden inside the blocks that make up these platforms, so you could say that you are in for a smashing time! You complete each level when you have either collected all the cherries or defeated the unicorns. There are also little tricks to be learned like moving the ladders and hitting the detonators to destroy whole platforms. But don't take too long on each level as the unicorns will go crazy and try to fill you full of holes! *Mr Do's Castle* is a worthy sequel with both attractive graphics and great sound that, in our opinion, is the best platform action to be had on the ColecoVision.

» COSMIC AVENGER

■ DEVELOPER: UNIVERSAL/COLECO ■ YEAR: 1982



■ A conversion of the obscure arcade game of the same name, this is nothing more than a rip-off of Konami's *Scramble*. But it's an incredibly good one that adds some nice graphical touches.

» SQUISH 'EM SAM

■ DEVELOPER: INTERPHASE■ YEAR: 1983



■ This is a great take on *Crazy Climber* where you must scale buildings and stamp on the enemies as you go. Quick reflexes and perfect timing will be required if you want to get to the top.



» SPECTRON

■ DEVELOPER: SPECTRAVIDEO ■ YEAR: 1983

■ **The ColecoVision might** not have got an official port of *Space Invaders* but it did get an excellent clone in the form of *Spectron*. In fact this title takes the Taito classic, spruces it up a bit and then adds in a few elements from *Galaxian*. The basic set up is the same; there are aliens, a ship, shields and the bonus UFO that can be shot down for valuable bonus points. But what Spectravideo did do is add in the dive-bombing kamikazes from *Galaxian*, aliens that split off the pack and risk it all to take you out. *Spectron* looks gorgeous and plays even better – this is a real slice of old-school arcade action.



» ROBIN HOOD

■ DEVELOPER: XONOX ■ YEAR: 1984

■ ***Robin Hood* is** a stunning looking game from Xonox that takes the legend of the Sherwood Forest rebel and applies it to Stern's classic *Berzerk*. On the first screen you run around the forest shooting arrows at the Sheriff of Nottingham's men, once you have taken them all out you move onto the second screen where you indulge in hand-to-hand combat. Having proven your fighting prowess you then have to infiltrate King John's castle where archers are waiting take you down from the ramparts. *Robin Hood* is a great way to use a classic story that has some nice variations in the gameplay to keep you interested.



» SKIING

■ DEVELOPER: TELEGAMES ■ YEAR: 1986

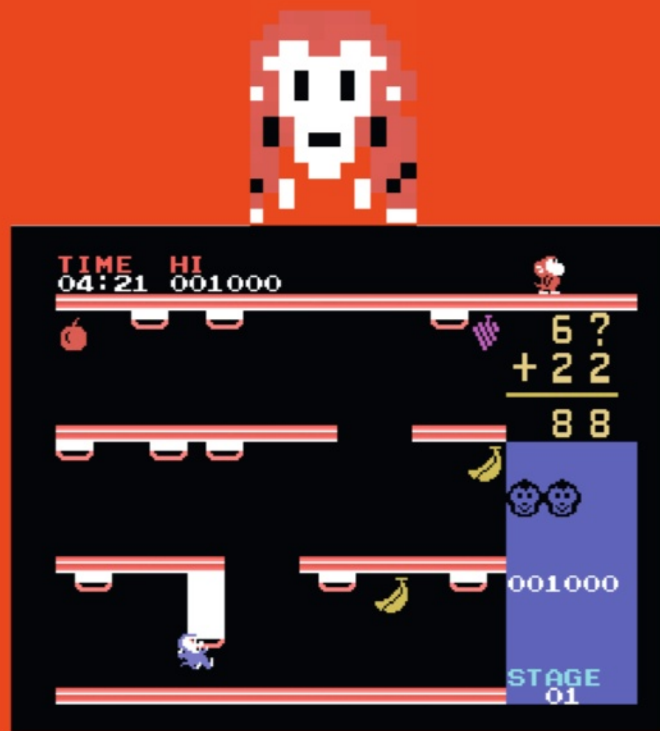
■ **This was the** last commercial game released for the ColecoVision in 1986 and was sold mostly via mail order by Telegames, which had its own official version of the ColecoVision called the Telegames Personal Arcade. This means many people aren't aware of it, but they are missing out because this is a great recreation of the winter sport. You can choose to go downhill, compete in the slalom or even do both! You can also try to beat your own times or take on your friends to compete for the gold medal, and this is where the game really becomes fun. *Skiing* offers up something a bit different to all the arcade games.

MONKEY ACADEMY

■ DEVELOPER: KONAMI/COLECO ■ YEAR: 1984

■ **Whenever people try to combine education and gaming it usually goes horribly wrong, so we were pleasantly surprised to discover this fine effort.** Even more interestingly it originates from the arcades, a Konami title no less, which is an even rarer place than a console to find a game of this type. *Monkey Academy* is based around maths and you start the game by choosing just what type of sums you want – adding, subtracting or dividing. Then you get to decide the level of difficulty, which determines how many enemies will be trying to stop you 'do the math'. Once into the game it looks very much like a typical arcade platformer. A sum is then revealed that must be solved to complete the level. Sitting above the sum on the very top platform is your friend, eagerly awaiting your moment of genius. Enemy crabs start making their way down the platforms making it quite reminiscent of the original *Mario Bros* game. Hanging from the various platforms are hooks that your monkey can grab hold of. When pulled, these reveal a banner with a number on it and once you find the number that solves the sum you press the button to grab it and take it up to your buddy. Also dotted around the screen is fruit, and this can be chucked at the enemy to kill them. *Monkey Academy* is a great edutainment title with the emphasis very much on the fun.





» [ColecoVision] Nobody had ever imagined that maths could be this fun!

» TURBO

■ DEVELOPER: SEGA/COLECO ■ YEAR: 1982

■ When compiling this list it only seemed right to mention this conversion of Sega's *Turbo*, especially after the game starred in one of our favourite movies – the brilliant *Wreck-It Ralph*.



» ROCK 'N BOLT

■ DEVELOPER: ACTIVISION ■ YEAR: 1984

■ Published by Telegames, this isometric strategy puzzle game has you running around trying to fix down moving floors, without getting yourself trapped. Very fun and addictive.





» STRIKE IT

■ DEVELOPER: BIT CORP ■ YEAR: 1983

■ **Every system needs** a good *Breakout* or *Arkanoid*-style game, it's a genre that endures to this day and remains popular. Programmed by Bit Corporation, which produced its own clone of the ColecoVision called the Dina 2-in-1 (it also played Sega SG-1000 games), it is somewhat of a halfway house between Atari and Taito's games. It is not as simple as *Breakout* but not quite advanced as *Arkanoid*. It adds things like a multi-ball, enemies and an interesting two-player mode. The company also got the main thing right here: the controls. These games can be notoriously hard to play without a paddle-type controller.



» TUTANKHAM

■ DEVELOPER: PARKER BROTHERS ■ YEAR: 1983

■ ***Tutankham* is a** conversion of a 1982 Konami arcade game with an interesting story behind it. The game was originally titled Tutankhamen after the famous Egyptian pharaoh, but it was soon discovered that the full name could not fit on the cabinet so the title had to be shortened down! The actual game is an arcade adventure where you take on the role of an explorer who is robbing Tutankhamen's tomb. You are chased by creatures such as vultures, bats, dragons and even an evil curse! You need to find the treasure as quickly as possible and make your escape. *Tutankham* remains a hidden gem from Konami's illustrious history.



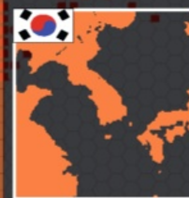
» ZENJI

■ DEVELOPER: ACTIVISION ■ YEAR: 1984

■ **The ColecoVision has** a lot of arcade titles to its name, so if you are looking for something a bit more cerebral then *Zenji* will be right up your street. This is a puzzle game where you control the titular Zenji, a big smiley face, who is trying to connect up all the elements of a maze to keep the mysterious green pulse flowing. This means turning the squares that make up the screen as quickly as possible so they all connect. You must watch out for both the time limit and the enemies trying to stop you. You also have the option to defuse bombs for bonus points. *Zenji* is a fiendishly addictive title for the machine.

IMPORT ONLY

GAME ORIGIN



- » **COUNTRY:** SOUTH KOREA
- » **POPULATION:** 50 MILLION
- » **CAPITAL:** SEOUL
- » **NATIONAL LANGUAGE:** KOREAN
- » **CURRENCY:** WON
- » **TIME ZONE:** UTC+9

» **CO-ORDINATES:** 36°0000' N 128°0000' E

INFO



- » **PUBLISHER:** SIECO
- » **DEVELOPER:** OPEN CORP
- » **SYSTEM:** MASTER SYSTEM
- » **ALSO ON:** N/A
- » **GENRE:** BEAT-'EM-UP
- » **RELEASED:** 1994
- » **EXPECT TO PAY:** £60-£70

EVOLUTION OF THE GENRE

▲ **Retro**



JANGGUN-UI ADEUL
RELEASED: **1992**
This Famicom fighting game is a rare Korean original, licensed from director Kwon-taek Im's crime drama, known in English as *The General's Son*. Developed by Daou Infosys, the game isn't tremendous – the scrolling fighter on other formats is rather better – but it shows a Korean take on the Nineties beat-'em-up boom.

▼ **Modern**



THE KING OF FIGHTERS 2002
RELEASED: **2002**
Korean developer Eolith was given the task of developing the *King Of Fighters* series following SNK's bankruptcy in 2001, and this effort shows similarities to *Jang Pung 3*. A huge cast of characters assembled for battle on aging hardware, in this case the venerable Neo Geo arcade board.

JANG PUNG 3

» FIGHTING TOURNAMENTS IN VIDEOGAMES ARE OFTEN HELD TO FURTHER THE AMBITIONS OF AN EVIL CORPORATION OR OTHERWORLDLY CONQUEROR, BUT SOMETIMES MARTIAL ARTISTS ARE BROUGHT TOGETHER BY A HIGHER CALLING: THE THREAT OF A NAZI CYBORG. NICK THORPE DIGS OUT HIS KARATE GEAR…



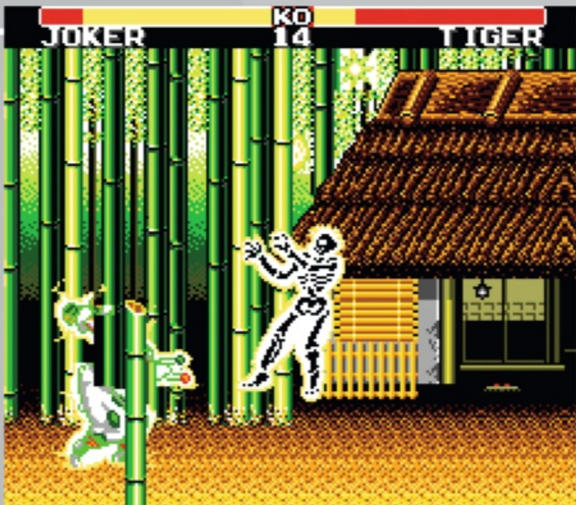
» [Master System] The use of custom hit sprites for elemental attacks is a nice touch that shows *Jang Pung*'s inspirations.

It's rare to see a Retro Gamer article open with a discussion on trade law, but you can't really discuss the history of gaming in South Korea without touching on such issues. You see, two key legal factors shaped the evolution of the market. The first is legislation restricting the distribution of non-Korean media, enacted following the end of World War Two to protect Korean culture after decades of Japanese rule. Any console games coming into Korea had to be produced in Korea, or at least by a Korean company – a situation which resulted in Master System and NES receiving Korean releases as the Samsung Gam*Boy and Hyundai ComBoy respectively.

The game's 8-meg cartridge is used to full effect, as it offers 12 playable characters, rather more than Probe's *Mortal Kombat* conversions or TecToy's Brazil-exclusive *Street Fighter II*. Those 12 characters are a diverse bunch, each sporting unique special moves. On the typical end of the scale is Sanghun, a Korean martial artist who happens to share his name with the game's director. Less conventionally, Joker is a clown who throws cards as projectiles and gives opponents electric shocks. We particularly like Ycina, whose fire attacks are nice but nowhere near as funny as her projectile attack, in which she chucks a shoe at her opponent.

Within a year, Sieco went from releasing a dreadful *Street Fighter II* clone to releasing a fighting game that could compete favourably with any fighter officially released for the console. The turnaround begins to make a bit more sense when you look at the talent behind it, as director and programmer Lee Sanghun knew his way around Sega's 8-bit console. He had started his career working on the MSX, a computer which was built around very similar hardware to Sega's machine – both feature a Z80 CPU and a video display processor based on the Texas Instruments TMS9918. His talents even saw him move on to working on licensed software, such as the Game Gear release of *GP Rider*.

Despite this, *Jang Pung 3* has two main issues. The first is sprite flicker, which blights the game during every fight. It happens to every character sprite, but becomes particularly noticeable with larger characters such as Mrs



» [Master System] Normally we'd refrain, but this image definitely calls for a shocking pun.

Bruno, as up to half the body can disappear at a time. It's a price paid for the game's technically ambitious nature – *Mortal Kombat* shows that the Master System can handle large sprites and *Masters Of Combat* proves that the system is capable of a high frame rate, but *Jang Pung 3* goes to show that achieving both at the same time is just too much to ask. While sprite flicker is a common problem with games on 8-bit consoles, few are as technically ambitious as *Jang Pung 3*, which means that it's much more noticeable here.

The second problem is that the game is relentlessly and absurdly tough. Even on the lowest difficulty setting, you can expect to be smashed to a bloody pulp by CPU-controlled fighters until you work out a strategy for dealing with them. This usually involves the use of special moves, as regular attacks aren't particularly damaging by comparison, and you'll often find yourself exploiting moves like Joker's electric shock – most AI opponents will casually walk into it as if you were offering a friendly handshake. There's not much in the way of balance in the game either, with some characters able to dish out enormously damaging multi-hit specials as standard while others are comparatively weak.

However, these problems don't detract too much from the fact that *Jang Pung 3* is very impressive indeed. This is, for all intents and purposes, a full-featured original arcade fighting game on a system which notoriously struggled with them. That's what makes the game such an interesting product. The release of a game of this quality on a system which is notable for receiving little third-party support, from a country which is not well known for its console releases, is pretty staggering. The game's South Korean heritage is visible in a variety of ways, such as the prominent flag in the Seoul background and the naming of the generic martial artist, but it could easily have found release outside of the country with just a few plot modifications – even the intro is in English.

If you're looking to play *Jang Pung 3*, the easiest way is to use an emulator. However, you may need to try out a few before you get it working as the game's unusual mapper causes problems in many popular emulators. But thanks to low production numbers and a lack of export, it might sadly be your only option.

> **"Sieco went from releasing a dreadful Street Fighter II clone to releasing a fighting game that could compete with any fighter released for the console"**

CAN'T IMPORT? YOU COULD TRY



MASTERS OF COMBAT

» This is one rare game, and can be expensive (up to £100), but worth tracking down as it's one of the few great fighting games on the Master System. The game is tailored to the console's strengths, resulting in a game with fewer characters and smaller sprites than the likes of *Mortal Kombat* or *Jang Pung 3*. The trade-off was that the action was faster than the former and nowhere near as prone to sprite flicker as the latter. The game even has its own nonsensical fighting game story, complete with cutscenes.



» [Master System] Sanghun's dragon punch is accompanied by an actual flaming dragon.



» [Master System] Unique projectiles such as Joker's cards add to its personality.



» [Master System] The character select shows off the game's diverse cast nicely, as well as highlighting the unusual fighting locations.

GO DEEPER

Smash-mouth action



Intellivision 35 YEARS

Television with Intelligence



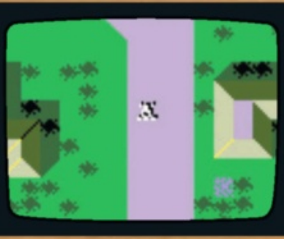
35 years ago, a new console manufactured by Mattel introduced several concepts that were notably ahead of their time. Graeme Mason tells the story of the Intellivision

Formed in 1945, Mattel was the brainchild of two men, Harold Matson and Elliot Handler, whose names helped form the iconic moniker. Their expertise was toys, and the pair made the company extremely successful as the Seventies dawned and an era of electronic entertainment began to permeate the toy business.

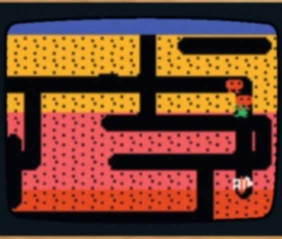
An unofficial electronics division was formed by Mattel in 1976, ostensibly to create handheld LED games, which had started to become popular. Mattel's first examples of these were *Auto Race* and *Football*; both were successful enough for the company to consider further projects in the department. Rick Levine, who joined Mattel in 1978 and would become an integral part of the Intellivision scene, was involved in some of these early games. "For the first few months at Mattel I worked on handheld games, reworking some *Hearts* code [a card game] for the Gin device," begins Rick, "and also coding and getting co-patent for *Handheld Bowling* and *Look-Alive Baseball*, which never made it to market." Then came the Atari Video Cartridge System, or Atari 2600. Offering the interchangeable cartridge model as pioneered by the Odyssey Magnavox, and a colourful (if somewhat blocky) display that inspired a mass of instantly playable and accessible games, the VCS was a smash hit that had many companies green with envy, including Mattel.

The idea of a console that delivered a superior experience to the Atari model was fostered by Richard Chang, head of Mattel's Design and Development department. However, with executives reluctant to invest in a machine that was likely to face stiff competition from a popular and well-established rival, development was halted as Mattel concentrated on its handheld electronic products. Eventually, pressure from more forward-thinking executives such as Jeff Rochlis resulted in the project moving forward once more, ironically aided by the continuing phenomenal success of the VCS.

The development was initially handled by Aph Technology Consultants, hired by Richard Chang to assemble an outline, in addition to providing the majority of the software and the console's operating system. This OS would gain the name the 'Exec' or 'Executive' while a team headed up by Mattel's Dave Chandler began the actual nuts-and-bolts design and engineering of what was planned to be a serious rival for Atari's best-selling games machine. "I think Mattel had intended to keep the software in-house," says Dave Rolfe, who had begun work at Aph in 1977, "but realised



» [Intellivision] *Auto Racing* was an exciting two-player racing game, despite some control issues.



» [Intellivision] One of INTV's most successful releases, *Dig Dug*.



» [Intellivision] A *Space Invaders* clone for the machine was inevitable.



» [Intellivision] Attacking oddly-coloured AT-AT's in *The Empire Strikes Back* from Parker Bros.



they lacked people with the necessary skills." Having provided the prototypes for a brace of Mattel's handheld games, Aph was a known and trusted affiliate. "So we helped with the prototype software for the Intellivision," continues Dave, "which they needed to show off at a private suite at CES in Las Vegas for January 1978."

Dave continued working on the first Intellivision game, *Baseball*, and the Exec, side-by-side in the first half of 1978, the simultaneous development of game and operating system proving to be an excellent way of working. The idea of an on-board operating system was a new one, and it led to the addition of a graphics ROM that housed a selection of standard images (including the famous ▶

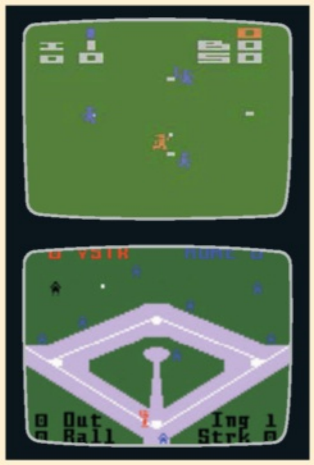
» Perhaps influenced by the Atari VCS 'Woody', the original Intellivision Master Component housed this strip of wood-effect plastic on its side.

Intellivision 35 YEARS

MATTEL INTELLIVISION VS ATARI VCS

The console war kicks off early

There was no doubting that the rivalry between the Intellivision and the Atari VCS was one of the earliest console battles. Initial advertisements for the Intellivision featured renowned American sports writer George Plimpton comparing Dave Rolfe's *Major League Baseball* on to the somewhat less inspiring *Home Run* on the VCS. And the technical design of the Intellivision itself was driven by the need to improve upon Atari's machine and a desire to make its games more complex. At the heart of the unit was a 16-bit processor, supported by the OS, Exec – the first console to do so. RAM was vastly superior with the Intellivision boasting three kilobytes compared to the 128 bytes inside the VCS. It had a three-channel sound chip instead of the 2600's weedy two channels via the TIA chip (demonstrated in the Intellivision's ubiquitous 'cheering' effect), could display a full screen against 40 pixels of the 2600 and had far superior sprite handling compared to the Atari machine. All this power meant the Intellivision was capable of delivering multifaceted games; however, a relative lack of colours (16 on the Intellivision compared to the 2600's 128), an established user base and a huge software library were in the Atari VCS's favour and proved decisive.





» Contrasting with the imitation wood beneath, the top of the Intellivision was braced with two light golden strips that gave the machine a futuristic look.



» Every Intellivision game came with two inlays which slotted into the controllers. They were an ingenious idea and extremely helpful in guiding the player through some of Intellivision's more in-depth games.

'running man') that could be utilised by games, therefore freeing up valuable cartridge space. "Obviously it was technically superior to the Atari 2600," smiles Dave, "in that its graphics processor could paint an entire frame. But like developers on the 2600, we were very good at getting the most effective games out of our hardware."

After the initial Californian test run in 1979 proved positive, the Intellivision was released worldwide in 1980, retailing in the US for $299. Unable to rely on its own arcade brands as Atari did, Mattel actively licensed several sporting organisations, creating a series of famous simulations such as *NFL Football* and *PGA Golf*. Together with colleague Mike Minkoff, Rick Levine had graduated to the Intellivision and one of its earliest games, *PBA Bowling*. "It was wonderful. My first handheld games were coded in 1K of memory on a 4-bit microprocessor! So it was a nice step up to work with a GI chip and the 16-bit-like instruction set," explains Rick. "And although at times I remember feeling constrained by the graphics capability and speed, I didn't have a problem with the built-in system software. It did the basic things such as handling interrupts and providing sprite collision call-backs pretty well." Rick departed from Mattel in 1980, tired of an awkward commute, and went on to create more Intellivision games at Imagic, including the fantastic *Microsurgeon*. Other game genres were bracketed into self-styled 'networks', creating the iconic boxes with a thick border colour representing each genre. The majority of the early games were created by the (mostly) ex-Caltech employees of Aph; however, with the Intellivision proving a solid success throughout 1980, there was soon a shift in thought at Mattel as the manufacturer realised it could easily acquire a team to code games itself.



"I was working as an IT manager for Thorn-EMI in London," says Gabriel Baum, "where I programmed and managed a team of programmers." Thorn itself was keen to work with Mattel and when the toy manufacturer's president Josh Denham visited London, a fateful meeting was arranged. "That evening [after the meeting] Josh called me," recalls Gabriel, "and asked if I would be interested in interviewing for the position of software manager. He clearly wanted to start in-house development." The first seed was sown; one week later, Gabriel was offered the role and he began work in January 1981. His first task? Simple: assemble an elite band of programmers and coders. "I knew I could find good programmers; but I wanted good programmers with expertise in the arts," continues Gabriel. "In England, the best coder I knew had read Latin and Greek at Oxford. At Mattel, I wanted not only musicians and painters, but also linguists, poets and historians. In fact anything that assured me that they could have a logical creative vision outside of coding." Gabriel's requirements meant, that while technical skill was naturally not ignored, a requirement to not only design, but design obsessively, was also considered paramount.



> **"We were very good at getting the most out of our hardware"**
> Dave Chandler


» Dave 'Papa Intellivision' Chandler.

As the team assembled, Howard Polskin of the magazine *TV Guide* gave it a legendary name: the Blue Sky Rangers. "For the Blue Sky Rangers," noted Polskin in the article, "videogame programming is not an occupation, but a joyful passion." Alas, the formation of Mattel's in-house team had the unfortunate, if predictable, effect of side-lining Aph's own development teams. "Richard Chang handed over the management of Aph to me," recalls Gabriel Baum, "and they were a very talented bunch of programmers. Initially they were our sole resource for games and, more importantly, development tools. But they were conflicted between wanting to be a valued Mattel resource and at the same time not wanting my growing Mattel internal development group to compete with them, making them superfluous." Ultimately, severe internal disputes within Aph ("troubling complications" notes Dave Rolfe) led to much of its staff leaving, with some, such as Dave, forming Cheshire Engineering where they continued to produce Intellivision games for Activision.

But we return to the Blue Sky Rangers – perhaps its most famous member, and a key figure in keeping the Intellivision alive after all these years: Keith Robinson. After graduating with a master's degree in Computer Science in 1981, Keith worked for a special effects company based in the San Fernando Valley, helping with blue-screen technology for media such as the *Star Wars Holiday Special*. "I went to a job fair, more out of curiosity than anything," says Keith, "and one of the first people I met there was Gabriel. We hit it off right away. He was particularly interested that I had just been at the studio that was doing special effects for *Tron*, since Mattel was developing a videogame based on the movie." Keith Robinson was ▶

INTELLIVISION [SEMI] EXCLUSIVES

The Intellivision games you really must play



SEA BATTLE

The Intellivision became synonymous with two-player games, a natural progression given its brace of hard-wired controllers. *Sea Battle* was a hugely compelling naval conflict simulation that lacked subtlety but nevertheless required a considerable amount of time to learn the best tactics and combination of ships.



ASTROSMASH

Mattel perhaps never gave its 'space' network the priority it deserved (something Atari picked up on in an early advert), but *Astrosmash* proved to be a more than suitable figurehead for the genre. A neat twist on *Asteroids* and *Space Invaders*, the game had a highly addictive multiplier score system to go with its frantic gameplay.



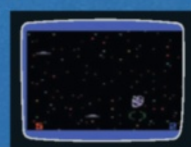
ADVANCED DUNGEONS & DRAGONS: TREASURES OF TARMIN

Treasures Of Tarmin saw Aph pushing the envelope, designing a demanding first-person maze coupled with turn-based combat as the player sought out the Minotaur, and more importantly, its generous treasure chest.



THIN ICE

Thin Ice was one of several unreleased games that were given a second chance by INTV Corp. Playing Duncan the penguin, the aim was to skate around rivals, dunking them in the icy water while consuming prawn cocktails. *Thin Ice* is a sweetly playable and fun arcade game that borrows more than a little from the classic *Qix*.



SPACE BATTLE

Another in the 'space' network of games, *Space Battle* was rumoured to once have been a *Battlestar Galactica* licence. The scanner showed attacking fleets converging on your base; correct deployment of the player's own squadrons to head off the marauders was vital, and the game had plenty of fast-paced shooting action too.



UTOPIA

This was the game that proved the Intellivision was streets ahead of the competition when it came to addictive strategy games. Often regarded as one of the first examples of the god game genre, two players took control of an opposing island each, constructing buildings and fishing boats to keep the population housed.



MAJOR LEAGUE BASEBALL

Intended to compete with the Atari VCS's risible *Home Run*, *Baseball* was designed and coded by Dave Rolfe alongside the Intellivision's operating system. Reputably the console's best-selling cartridge, Mattel began a groundbreaking trend that saw it license several sporting bodies over the coming years.





» Keith Robinson, keeping the Intellivision alive.

recruited into the Blue Sky Rangers, and encapsulating the frantic nature of the industry in the early Eighties, soon found himself promoted to manager, overseeing development rather than coding himself. "Aph created all the initial software for Intellivision and they defined the look and style of the system. So when we began as part of the in-house team, we had them as our inspiration." says Keith. The bar that Aph had created then served as a benchmark, one the Blue Sky Rangers would continually try to raise, creating new effects and gameplay that had hitherto not been seen on the system.

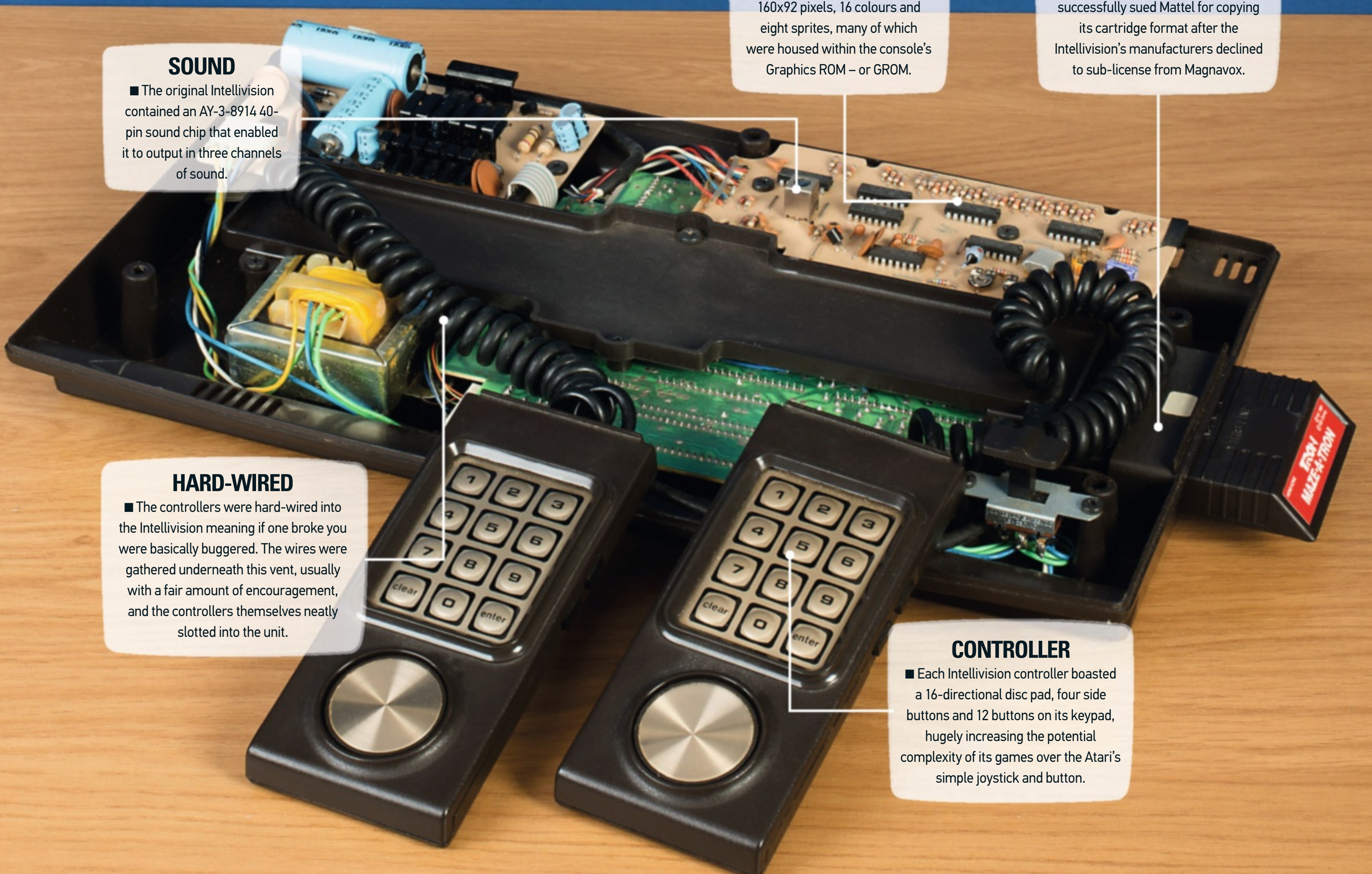
Despite Keith's new managerial role, he had still found time to appreciate the helpful nature of the Intellivision as a system to code on. "Once you got used to the operating system, the Exec, it was a great system and quick to get something on-screen," he says. "The Exec was essentially a game loop – your 'program' was really a group of subroutines automatically called when certain events happened." Keith uses collision detection as an example: when object one collided with object two, as detected by the hardware, the system would call the subroutine to then handle the collision. "Some people never got used to it and were always fighting the in-built structure, but I thought it was very clever and helpful." Even so, he acknowledges that a skilled coder would know how to bypass the Exec loop and create special effects or events not anticipated by the operating system.

One aspect of the Intellivision that generally remained with Mattel throughout its life was hardware. A series of add-ons were proposed and produced for the Master component that were all designed to enhance the gaming experience, in addition of course to the Intellivision II. The most famous of these was the Intellivoice, a small unit that plugged into the cartridge slot and enabled specific games to offer digitised speech. Less of a success was PlayCable, a concept of quite extraordinary foresight that allowed games to be downloaded to the Intellivision via cable TV. And the keyboard component, an ambitious plan by Mattel to transform the console into a home computer, endured a particularly troubled development and was never even released beyond a few units sold via mail order. All these extra items were seen as valuable by Mattel as it valiantly tried to grab consumer attention; lack of software support doomed it to failure.

Yet, there was another, much deeper and more foreboding shadow on the horizon. The videogame crash, reportedly engendered by an excessive rush of companies desperate to cash in on the videogame phenomenon, and most keenly felt in the Intellivision's home country, was impending. Keith Robinson explains: "Mattel, like Atari and Coleco, were hardware manufacturers; their games consoles were being sold at prices that didn't have much – or any – profit, the hope being that the more consoles were out there, the more games they could sell. Unfortunately there were more and

INSIDE INTELLIGENCE

Learn what lies under the hood



SOUND

■ The original Intellivision contained an AY-3-8914 40-pin sound chip that enabled it to output in three channels of sound.

GRAPHICAL SPECS

■ The Intellivision could display 160x92 pixels, 16 colours and eight sprites, many of which were housed within the console's Graphics ROM – or GROM.

CARTRIDGE SLOT

■ The creator of the first true videogame console, the Odyssey, successfully sued Mattel for copying its cartridge format after the Intellivision's manufacturers declined to sub-license from Magnavox.

HARD-WIRED

■ The controllers were hard-wired into the Intellivision meaning if one broke you were basically buggered. The wires were gathered underneath this vent, usually with a fair amount of encouragement, and the controllers themselves neatly slotted into the unit.

CONTROLLER

■ Each Intellivision controller boasted a 16-directional disc pad, four side buttons and 12 buttons on its keypad, hugely increasing the potential complexity of its games over the Atari's simple joystick and button.

» [Intellivision] Rick Levine's *Microsurgeon* was a compelling and beautiful game.



more games available from other publishers that never made the console manufacturers a dime." In addition, Keith attributes Mattel's obsession with creating new hardware as a key factor in its relative lack of success in the field. "By 1983 the Intellivoice, the Entertainment Computer Module, the Aquarius computer, the Intellivision III, the Intellivision IV and other hardware were all either marketed or in development at Mattel. They couldn't sell enough games to cover the expenses. Had they not invested so much in hardware development and just concentrated on the Intellivision console and games, they could have survived a few years later – essentially, that's what INTV Corp did."

INTV, originally named Intellivision Inc, was formed by Terry Valeski, a former senior vice president of marketing and sales at Mattel, along with a string of investors. When Mattel closed its electronics division, the rights, patents, trademarks and assets to the Intellivision were acquired by Valeski and the investors for a reported 16.5 million dollars, with the eventual plan to release a brand new Intellivision console. This marked a successful phase for the console as INTV marketed its new machine, the INTV System III (essentially the original master component with some cosmetic alterations) and released over 30 new games. The end for Intellivision as a commercial concern eventually came in 1990; INTV had already ceased selling software in stores, concentrating on mail order only. Now, with the Super Nintendo and Genesis consoles in full swing, the poor Intellivision was beginning to look outdated.

As far as Mattel itself was concerned, the end for Intellivision came in January 1984 when the entire programming staff was laid off. Yet despite this sudden end to the division, those involved have nothing but fond memories of the time. "I always remember how much fun it was," says Keith. "When Mattel Electronics was closing down, one of the other managers said to me 'I'll never again work for a company that will be this much fun.' I always think of that while running Intellivision Productions, Inc – if it isn't fun, why do it?" Gabriel Baum recalls: "Our development group grew at an incredibly rapid pace. We then had a short period of stasis followed by a rapid crash, which was naturally the most difficult period. But it was a superb time." Rick Levine, who had left Mattel long before the crash, thinks Mattel perhaps could have even weathered the storm had it persevered. "I do wonder that if Mattel had released an enhanced Intellivision, it might have competed well with the consoles that spurred the next generation of videogames," he muses. "But in any case, I worked with some terrific people at both Imagic and Mattel, and made some memories that will last me a lifetime." But we leave the final world to the man who has remained a shining beacon for the Intellivision, into the 21st Century. "The group of people who worked on Intellivision were creative, smart, funny people and I think that is why so many of the games are still so fun." says Keith Robinson. "And I enjoy hearing from and meeting the people who grew up playing the games. That's what I like most about keeping Intellivision going: paying tribute to the connection between these two groups – the ones who created the games and those who played them."

The story of the Intellivision is a far from perfect one. Mattel undoubtedly made mistakes, most notably pursuing a mainly indifferent public with numerous hardware upgrades when all it really wanted was software. But the console was a trailblazer in many respects, and home to some superb games that often required mental power in addition to keen reflexes. And incredibly, the story is still being written today, 35 years since those first few lucky people in Fresno, California stared wide-eyed at those beautiful gold strips and dark plastic and dreamed of what wonders the Intelligent Television could show them.

Our thanks to Gabriel Baum, Rick Levine, Dave Rolfe and Keith Robinson and all those we spoke to regarding this feature. Our special thanks to Dennis Smith, Eugenio Angueira and Alessandro Pace for images and other assistance.

PERIPHERAL VISION

The Intellivision had all manner of add-ons…

INTELLIVOICE

It's hard to believe today, but back in the early Eighties, synthesised voices in videogames was a hugely exciting development. The Intellivoice, like the majority of the Intellivision's peripherals, was designed in-house by Mattel, yet despite early encouragement proved either too expensive or too unnecessary for the majority of Intellivision owners. *B-17 Bomber* was arguably the module's finest hour.



PLAYCABLE

An incredibly forward thinking and ambitious add-on, the PlayCable, like the Intellivoice, neatly slotted into the side of the master component and permitted games to be downloaded via TV cable. However, despite its abilities, support for the module was again poor and the service was discontinued in 1983, the subscription fee in addition to the cost of the unit no doubt discouraging many gamers.



INTELLIVISION KEYBOARD COMPONENT

Plans of a keyboard add-on, effectively transforming the console into a home computer, were projected. Difficulties and costs meant only a few thousand were produced, and the system was scrapped in 1982 with no real release. The Intellivision II's Entertainment Computer System, or ECS, met with similarly disappointing results.



SYSTEM CHANGER

Designed for the Intellivision II, and essentially created as an advertising gimmick, the System Changer Module allowed the Intellivision to play Atari 2600 games, enabling it to be marketed as the system that had the most games available. Simply an Atari 2600 clone, the system changer merely utilised the Intellivision's power supply and RF modulator, but came too late to save the console.





» Rick Levine proudly holds an impressive print from his game *Microsurgeon*.



» Rick Levine today.

» The Intellivision II featured a few nominal improvements over its predecessor, but lacked its classic design.



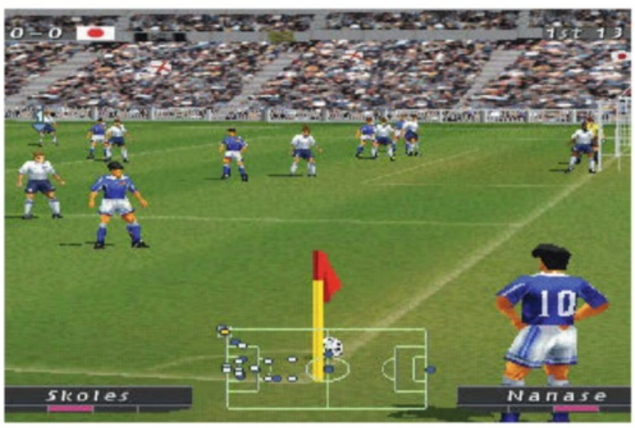


» The Voice Synthesis Module enabled the Intellivision to produce speech, but was used by few games.



TOP 25 PLAYSTATION GAMES

The classic library of Sony's world-conquering console is overwhelming – readers provided over 150 nominations for its top 25 games. Join Nick Thorpe to see if your favourites made the cut…



ISS Pro Evolution

DEVELOPER: KONAMI
YEAR: 1999 **GENRE:** SPORTS

25 **Konami's *International Superstar* *Soccer*** had long been a fantastic choice for gamers looking for an alternative to EA's *FIFA* series, and this game represents the transition from the *ISS Pro* series to the modern *Pro Evolution Soccer* line. *ISS Pro Evolution* introduced club teams and the Master League mode, bringing it closer to audience tastes while evolving the series' trademark simulation gameplay with additional dribbling tricks and an extremely potent one-two pass.

Gran Turismo 2

DEVELOPER: POLYPHONY DIGITAL
YEAR: 1999 **GENRE:** RACING

24 **It can be** hard to follow up the phenomenal success of a game like *Gran Turismo*. Polyphony Digital's approach was to retain the gameplay of the original and massively increase the amount of content available, including over 600 cars and 27 tracks. The game also widened in scope, with the new additions including off-road tracks and rally cars. The scale of the game required it to be split across two discs, with the arcade and simulation modes now contained separately.



Einhänder

DEVELOPER: SQUARESOFT
YEAR: 1997 **GENRE:** SHOOT-'EM-UP

23 **Shoot-'em-ups are definitely** outside of Squaresoft's RPG comfort zone, but you wouldn't have known it when playing *Einhänder* – the game was pretty conventional, but of a very high quality. The gameplay was enhanced by the combo-based score system and modular Gunpod power-ups, useful for taking down the big bosses. It's the only import game to reach your top 25, and we can only imagine how high it would have climbed if it had received a UK release. We're hoping for a PSN release to correct the injustice.



Time Crisis

- **DEVELOPER:** NAMCO
- **YEAR:** 1997
- **GENRE:** LIGHTGUN SHOOT-'EM-UP

22 **The first of** Namco's arcade conversions to make our list, *Time Crisis* provided an excellent rendition of the rescue mission that had enthralled arcade gamers in 1995, including all of the incredible set pieces and secrets. It's easy to take the game for granted now, but the action pedal was a revolution in lightgun game design – the ability to take cover allowing the player an additional means of avoiding damage beyond simply firing faster than the enemy – though the constantly running timer means that you'll rely on your sharpshooting frequently.

But Namco didn't stop there – the game included an exclusive home console mission that featured entirely new stages and boss battles. In the new mission, protagonist Richard Miller is tasked with infiltrating a hotel which happens to be a front for an illegal weapons factory, run by the villainous Kantaris. The new mission changed the dynamics of the game, introducing a grading system which determined the route players took through the game, offering players the chance to visit different locations and fight different bosses on each playthrough. The inclusion of the extra mission massively extended the lifespan of the game and gave arcade veterans a key reason to pick the game up.

The story of *Time Crisis* on the PlayStation is as much about the hardware as the software. The game was incompatible with previous lightguns, and came bundled with Namco's new lightgun. The G-Con 45 featured extra buttons along the barrel, acting as a substitute for the arcade game's foot pedal, and plugged into the console's video output to enhance accuracy. Other developers adopted Namco's gun as a new standard, as thousands of players picked up the hardware and its bundled killer app.



"A great shooter with music to die for"
gmintyfresh



Resident Evil

- **DEVELOPER:** CAPCOM
- **YEAR:** 1996 **GENRE:** SURVIVAL-HORROR

20 **Capcom's survival-horror game** made a huge impact on its debut, popularising survival-horror and shifting over 5 million copies. Locked inside a deadly mansion filled with mutated monstrosities, your goal was to take control of special forces agents Jill Valentine or Chris Redfield and get out alive – along with as many of your comrades as you could save. With limited ammunition, there was no hope of laying waste to every zombie you could find – a tension-building approach which was novel in 1996. The fantastic 2002 GameCube remake means that the original *Resident Evil* doesn't have the impact it once did – but just remembering those dogs crashing through the window easily justifies the game's place in this list.

PaRappa The Rapper

- **DEVELOPER:** NANAON-SHA
- **YEAR:** 1996 **GENRE:** RHYTHM-ACTION

19 **The game that** popularised rhythm-action as we know it today, *PaRappa The Rapper* is one of the PlayStation's more offbeat hits. The core gameplay in *PaRappa* is simple – each of the game's six stages involves PaRappa rapping with an instructor, whose lines he must repeat by following the button prompts at the top of the screen. While the game received some criticism for its brevity, *PaRappa*'s charms won over gamers. The use of paper-thin cartoon characters in a 3D world is unique, the raps are memorable and PaRappa finds himself in some amusing predicaments, including queuing for the toilet. For that alone, PaRappa is possibly the most relatable character in any videogame ever.

"Stupidly addictive once you know what you're doing, and the songs are great too."
TwoHeadedBoy



Alundra

- **DEVELOPER:** MATRIX SOFTWARE
- **YEAR:** 1997 **GENRE:** ACTION-RPG

21 **The PlayStation is** renowned for its excellent selection of Japanese RPGs, but few of them took the action-RPG approach. Of the ones that did, *Alundra* was the best, which comes as no surprise. While Matrix Software isn't the most well-known studio, it was founded by staff from Telenet Japan and Climax Entertainment – the studio that was responsible for *Landstalker* on the Mega Drive. *Alundra*'s plot revolves around the titular elf who has wound up shipwrecked in a strange village. He has the ability to enter the dreams of others, which he needs to employ in order to work out why the inhabitants of the village are having dreadful nightmares. Standing apart from its contemporaries with great 2D artwork and a long, satisfying quest, *Alundra* is a classic that fans of the 2D *Zelda* games will particularly appreciate.







Tomb Raider

DEVELOPER: CORE DESIGN
YEAR RELEASED: 1996 **GENRE:** ACTION ADVENTURE

18 **While *Tomb Raider*** is one of the PlayStation's most iconic series, the annual sequels meant that voting was divided between five games and the series had a tough time in this poll as a result. The original is the game which makes your final cut, and a fine choice it is – its mixture of platforming, puzzle-solving and gunplay was groundbreaking in the mid-Nineties, a time when developers were still finding their feet when it came to making 3D games. The first game in the series has a heavier emphasis on puzzle-solving and exploration than its PlayStation sequels, and is packed with memorable moments including an encounter with a Tyrannosaurus Rex. *Tomb Raider*'s success was phenomenal, catapulting Lara Croft to stardom as one of gaming's first female protagonists and launching a series that has seen myriad sequels as well as movies and merchandise.

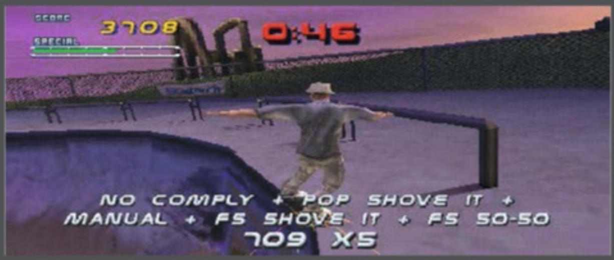
Silent Bomber

DEVELOPER: CYBERCONNECT2
YEAR RELEASED: 1999 **GENRE:** ACTION

17 **This futuristic action** game takes the classic top-down shooter format and introduces its own twist – instead of shooting your targets, your method of attack is to lay down bombs and detonate them from afar. This is complicated by a whole host of extremely aggressive enemies, ensuring that your protagonist Jutah is constantly in motion. The result is a unique game featuring a high level of difficulty and satisfyingly fast-paced action. It's not uncommon to find yourself fighting multiple enemies while avoiding the fires emerging from recently destroyed targets, which could have proved technically challenging. CyberConnect 2 managed to get the PlayStation to handle this visual overload admirably, and provided an appropriately energetic electronic soundtrack to accompany the carnage.



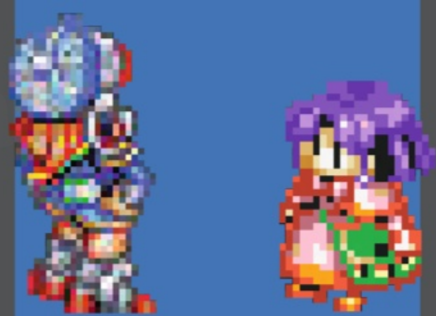




Tony Hawk's Pro Skater 2

DEVELOPER: NEVERSOFT
YEAR RELEASED: 2000 **GENRE:** SPORTS

16 ***Tony Hawk's Pro Skater 2*** was one of the most well-timed games ever – when it launched in 2000, you couldn't walk around town without seeing skateboarding teenagers. The original *Tony Hawk's Skateboarding* had been a surprise hit for Activision in 1999, meaning that *Tony Hawk's Pro Skater 2* had a lot to live up to. The basic goal of the game hadn't changed, however improvements could be seen in almost every area of the game. Stages were larger, with twice as many objectives and more secret areas to find. Most importantly, players could now perform manuals on flat ground, allowing for continued combos. Better yet, the game included two new user creation modes, which allows players to design their own custom skaters and stages, massively expanding the lifespan of the game. The soundtrack pleased the aforementioned skating teens and the improved visuals rounded off a top-notch game.



Grandia

DEVELOPER: GAME ARTS
YEAR: 1999 **GENRE:** RPG



15 ***Grandia* took ages** to arrive in the UK but was worth the wait. Ported from the Saturn original, this RPG avoided the genre archetypes of random encounters and turn-based actions. The combination of 2D sprites on 3D backdrops has aged well, too.

WipEout 2097

DEVELOPER: PSYGNOSIS
YEAR: 1996 **GENRE:** RACING



14 **Psygnosis's sequel took** everything that was great about the original and improved on it, introducing one of gaming's greatest power-ups – the Quake Disruptor. The more forgiving level of difficulty helped the game to reach a wider audience.

Tekken 3

DEVELOPER: NAMCO **YEAR:** 1998
GENRE: BEAT-'EM-UP



13 **A refreshed cast** and improved visuals took *Tekken 3* to the top of the 3D fighting scene in the late Nineties. The game also introduced the Eddy Gordo, a favourite of button-mashers worldwide – perhaps explaining why it didn't place higher.

Die Hard Trilogy

DEVELOPER: PROBE ENTERTAINMENT
YEAR: 1996 **GENRE:** VARIOUS



12 **Probe made the** best of this movie licence by designing individual games for each of the three films represented. Packed with irreverent humour and buckets of blood, the only thing it's missing is support for the G-Con 45 lightgun.

Gran Turismo

DEVELOPER: POLYPHONY DIGITAL
YEAR: 1997 **GENRE:** RACING



11 **Seeing *Gran Turismo*** in action for the first time was mindblowing – console racing games had never looked so realistic. It provided long-term value too, featuring 140 cars and 11 tracks. Little wonder it sold over 10 million copies, becoming the best-selling PlayStation game of all time.







Final Fantasy VIII

DEVELOPER: SQUARESOFT

YEAR RELEASED: 1999 **GENRE:** RPG

9 **For gamers whose** *Final Fantasy* experience began and ended with *VII*, *Final Fantasy VIII* came as a shock – but even those who had followed the series from its days on Nintendo consoles were in for some surprises. While the complete refresh of cast and plot was a series tradition, Squaresoft's decision to overhaul the visual style of the series wasn't expected by many gamers. The gameplay was also overhauled. Magic was now drawn from enemies, and summoned creatures played a far more crucial role in the game. The new Junction system allowed players to tie magic to stats for boosts – a deep but initially overwhelming addition. The changes weren't to everyone's tastes, explaining its lower position relative to its predecessor, but *Final Fantasy VIII* maintained the high quality associated with the series and ranks as one of the PlayStation's most visually stunning games.

Rage Racer

DEVELOPER: NAMCO

YEAR RELEASED: 1996 **GENRE:** RACING

10 ***Rage Racer* marked** the point at which the PlayStation entries of the *Ridge Racer* series were no longer tied to the arcade offerings. The game offered a new take on the series, with the scenery being more muted in colour than in previous releases. However, it was still spectacular scenery – new to the series was the emphasis on courses with great height variations, leading to memorable sights such as the waterfall on your climb towards the first track's tunnel and plunging downhill straights. The move to console exclusivity brought a main game with more depth, as you competed to earn cash with which to upgrade your vehicle to your liking. You needed the upgrades too, as later stages became very tricky to pass – especially given that you were limited to three retries. It wasn't the best-selling game in the series, but proved to be a key influence on its successors.



"I realised that console gaming had surpassed PC gaming when this was running fullscreen, with a controller"
SeanR

Doom

DEVELOPER: GT INTERACTIVE

YEAR RELEASED: 1995 **GENRE:** FIRST-PERSON SHOOTER

8 **This classic first-person** shooter might have appeared on every system under the sun, but that doesn't diminish the impact of the PlayStation release one bit – quite the opposite, in fact. Prior consoles had struggled to handle *Doom*, dropping enemies, windowing the action and even removing the music to get everything to fit. While PlayStation *Doom* didn't contain everything from the PC version, it was easily the most complete and playable console version available. The game includes over 50 stages taken from *Doom* and *Doom II* on the PC, as well as levels exclusive to the PlayStation, and the addition of a new ambient soundtrack further intensifies the fear factor that *Doom* is famous for. Best of all, it includes support for Sony's oft-forgotten link cable, allowing two players to have a deathmatch or team up to battle the monstrous hordes. First-person shooters evolved rapidly over the life of the PlayStation, but the quality of *Doom*'s conversion secures its spot.

Tekken 2

DEVELOPER: NAMCO

YEAR RELEASED: 1996 **GENRE:** BEAT-'EM-UP

7 **The original *Tekken*** became the best 3D fighting game on the PlayStation almost by default – it was clearly better than the likes of *Battle Arena Toshinden*, but was still in need of refinement. *Tekken 2* provided the tune-up that saw the series become a serious contender in the 3D fighting world. Staple moves such as reversals and back throws were introduced here, as well as competitive modes like Team Battle and Survival which cemented the game as a multiplayer favourite. *Tekken 2* introduced a range of new characters, from series stalwarts such as Jackie Chan homage Lei Wulong to comedy characters such as the boxing kangaroo Roger. Additionally, unlocking the sub-bosses was now a much more rewarding endeavour, as the returning characters were fleshed out to match the standards of the new sub-bosses, greatly expanding the cast's variety and giving the game increased long-term appeal.



"As much as I loved the first one, this just fleshed out the shell of a game it was"
Droo





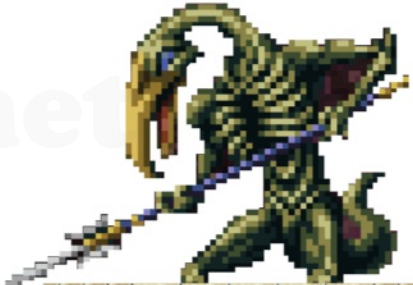
Ridge Racer Type 4

DEVELOPER: NAMCO

YEAR RELEASED: 1998 **GENRE:** RACING

6 Towards the end of the Nineties, it was clear that trends in the gaming market were changing. The colourful visuals and hyperactive soundtrack that had served *Ridge Racer* so well at the PlayStation's launch were out of fashion, and players increasingly demanded longer games with more content. Luckily for Namco, somebody had a finger on the pulse of gaming because *Ridge Racer Type 4* shifted effortlessly to match contemporary tastes. The game adopted pastel-coloured skies and a more relaxed soundtrack, while the racing – as excellently drifty as ever – took place across more tracks and cars than ever before in the new Grand Prix season mode.





Castlevania: Symphony Of The Night

DEVELOPER: KONAMI

YEAR RELEASED: 1997 **GENRE:** PLATFORMER



5 Konami's platformer was overlooked on release but has gained a thoroughly deserved reputation for excellence over the years. *Symphony Of The Night* moved away from the linear template of previous *Castlevania* games, opting instead for a single, massive map that opened up as new abilities were gained in a manner similar to Nintendo's *Metroid* games. The game provided huge scope for exploration, especially given that when you think it's all over, Dracula's castle inverts and provides you with even more to do. It's an expensive PlayStation game, but fan demand has seen it ported elsewhere since.

Tenchu: Stealth Assassins

DEVELOPER: ACQUIRE

YEAR RELEASED: 1998 **GENRE:** STEALTH ACTION



4 Ninjas had been the subject of countless games before *Tenchu*, but they were primarily action games. *Tenchu* explored a more authentic ninja experience, by requiring the player to exercise caution and stealthily assassinate targets. The game offered a great deal of freedom in terms of carrying out your objectives, but was not for the impatient – observation was key as you tried to identify the perfect time to strike. We have to admit to being surprised by just how high *Tenchu* placed, but it's well worth revisiting – dropping from the roof and slicing up an unsuspecting guard is a thrilling experience.

Metal Gear Solid

DEVELOPER: KONAMI

YEAR RELEASED: 1998 **GENRE:** STEALTH ACTION

3 The technology of the 32-bit era gave ambitious developers the tools they needed to provide cinematic presentation – and none were more ambitious in that regard than Hideo Kojima. *Metal Gear Solid*'s high quality cut-scenes provided a lesson in bringing the big screen experience to consoles. But *Metal Gear Solid* wasn't just great to watch, as it featured tightly designed gameplay that inspired a number of stealth imitators. However, none of them could match its creativity, as the game's ingenious design leveraged everything from the contents of your memory card to its own packaging.



"This was pretty much the reason I even BOUGHT a Playstation"
gunbladelad

Final Fantasy VII

DEVELOPER: SQUARESOFT

YEAR RELEASED: 1997 **GENRE:** RPG



2 Before 1997, publishers were under the impression that Japanese RPGs just weren't where the big money was to be made. Squaresoft's *Final Fantasy VII* changed that perception forever, selling over 9 million copies and causing a boom in RPG localisation. The game introduced a generation of gamers to the genre and spawned a variety of sequels, as well as a movie. *Final Fantasy VII* was an epic on an unprecedented scale. The game's use of pre-rendered backgrounds allowed the game a visual impact unique within its genre, combining with Nobuo Uematsu's incredible soundtrack to aid the story in emotionally affecting players. And boy, what a story – with a memorable cast of heroes, as well as an iconic villain involved in one of gaming's most notoriously shocking moments, it lingers in the memory long after completion.





"Any game that rewards an insane amount of practice and time spent with the chance to play as a block of processed soya curd must be the best of its generation"
earlymodernsteve

Resident Evil 2

DEVELOPER: CAPCOM **YEAR RELEASED:** 1998 **GENRE:** SURVIVAL HORROR

1 **With the success** of *Resident Evil*, a sequel was inevitable. After briefly planning a spin-off set in the ruins of the first game's mansion, Capcom put plans into place for a new game set in and around Raccoon City's police department, starring rookie cop Leon S Kennedy and student Elza Walker. If the latter name seems unfamiliar, your memory isn't failing you. *Resident Evil 2* had a lot to live up to – and Capcom knew it. A year into development, the new game wasn't living up to the team's expectations. Rather than trying to fix the game's problems, Capcom took the bold decision to scrap the game and start again. The number one spot achieved here just goes to show how well that risk paid off.

Now starring Leon and Claire Redfield, the sister of Chris from the original game, the *Resident Evil 2* that made it to market retained the basic setting of the scrapped sequel but little else. While the basic idea of the game remained much the same as the original – escape with your life, as well as any survivors you find – the new setting made for big changes. Where the original game turned up the heat slowly by introducing a single zombie after a few scenes of build-up, *Resident Evil 2* drops you straight into the fire, placing you on the already infested streets of Raccoon City.

Resident Evil 2 employs many of the same mechanics as the original game – the same controls, the limited saves and those item storage chests all make a return. However, it improves on the original in a variety of ways. Characters now respond to damage visually, clutching wounds and even limping as their health drops, and a variety of mini-games are provided for players who have finished the game, including the brilliantly ridiculous Tofu Survivor mission.

But the biggest improvement was the 'zapping' system, which allowed the two characters to experience each other's scenarios. Actions taken with one character will affect the other character's experience – defeating an enemy during your first run may well remove it for the second, while using up items during the first run can make it harder to get through the second. This feature gave the game massively improved replay value over its predecessor.

Resident Evil 2 was a narrow winner in the voting, but it's a worthy one which represents Capcom at its absolute best. The game's mechanical improvements were subtle enough to keep things immediately familiar to fans of the original game, but the new setting allowed the game its own distinct identity. Refusing to compromise on quality caused short-term strife, but the resulting game has stood the test of time.

Five Reasons Why It's Great

1 It brilliantly handled the diminished shock value of zombies by introducing iconic enemies like the Licker.

2 The plot doesn't spiral into the complex nonsense of later games in the series.

3 It introduced Leon, who also starred in the excellent *Resident Evil 4* as well as the best bit of *Resi 6*.

4 Raccoon City is the perfect setting for *Resident Evil*, which is why it's so frequently revisited.

5 How many other games let you run around as a giant block of tofu?



THE UNCONVERTED

Arcade games that never made it home

SHOOT-'EM-UP EDITION

ZERO GUNNER

■ **Developer:** Psikyo ■ **Year:** 1997 ■ **Genre:** Shoot-'em-up

■ **You might well be familiar with the name *Zero Gunner*, but if you are it's almost certainly because of its excellent sequel *Zero Gunner 2*, which is one of the many worthwhile shoot-'em-ups on the Dreamcast.** The original game is rather less well-known, having never received a home conversion. *Zero Gunner* arrived in arcades in 1997, powered by Sega's ageing Model 2 board. The game puts you in charge of a helicopter gunship in the year 2016, fighting to take back control of the world's militaries from terrorists. This flimsy premise is reason enough for you to take to the skies in Asia, the USA and Europe, blowing up all manner of other aircraft as well as bosses including battleships and massive planes.

The primary gimmick in *Zero Gunner* is the lock-on feature, which allows your helicopter to roam the screen while still directing fire at the targeted enemy – a feature that would later be expanded upon by the sequel, which offered full 360 degree rotation. In *Zero Gunner*, your lock-on capability is limited, with a helpful bar on the left of the screen showing just how much has been used. With that exception, the game feels vastly more traditional than its successor, with enemies heading down from the top of the screen.

There's a nice variety of stages available, from the deserts of Algeria to windmills in the Netherlands, but the game doesn't look tremendously good – stage backgrounds are repetitive, with little in the way of notable landmarks. Sound is also a little weak, with military-themed music that fits the action without ever grabbing your attention.

However, these weaknesses don't change the fact that *Zero Gunner* is underpinned by some extremely solid game design. Its conventional approach to the genre doesn't break any new ground in the way that *Zero Gunner 2* did, but nevertheless provides a challenging, satisfying blast. Level design is of a high standard and the bosses are excellent, with the multi-target battleship proving to be one of the game's highlights – just as a similar section did years later in *Under Defeat*. If you've played one too many bullet hell shooters and grown tired of them, playing *Zero Gunner* could be just the change you need.



CONVERTED ALTERNATIVE

UNDER DEFEAT 2006

While *Zero Gunner 2* did receive a home conversion, it's G Rev's blaster that feels closer to the original game, thanks to the limited helicopter rotation. You can pick this one up on Xbox 360 or PS3, but we still have a soft spot for the Dreamcast conversion.





» Lock-on ability is strictly limited in *Zero Gunner*, with this meter showing you how much time remains before you'll need to re-target the enemy.

» Unlike its successor, in *Zero Gunner* you'll always be facing off against enemies arriving from the top of the screen. This causes the game to feel a little less interesting.

» Targeting enemies is pretty simple – the first untargeted shot to connect with an enemy will place a crosshair on that enemy until it is destroyed or you stop shooting.

» While the scenery is varied by location, the muted colour scheme makes the backdrops look unnecessarily repetitive. It's a shame, as the international theme is otherwise good.

BEST LEFT IN THE ARCADE

ZAVIGA

■ **Developer:** Data East ■ **Year:** 1984 ■ **Genre:** Shoot-'em-up

■ *Zaviga* adds the extra dimension of height to vertically scrolling shoot-'em-ups, but somehow manages to be less interesting than the likes of *Zaxxon* despite being two years more recent. The key mechanic is the ability to change your ship's height – flying low opens you up to smashing into mountains and ground-based enemies, while flying high makes it harder to hit ground-based enemies as you're limited to dropping bombs on them.

The problem is that 98 per cent of the time, there's little reason to take the extra risk involved with flying low, as the game rarely includes any high-level obstacles to encourage you to swoop down. The top-down perspective also limits the game to two levels of height. With the game's most interesting mechanic rendered rather pointless, all that remains in *Zaviga* is a *Xevious* knock-off with uninteresting enemy patterns and less variety in scenery.

We're not surprised that Data East backed its other 1984 shoot-'em-up *B-Wings*, which was eventually converted to the Famicom. It wasn't the most memorable shoot-'em-up, but we're grateful for that fact that it spared home users this shambles.



GIGANDES

■ **Developer:** East Technology ■ **Year:** 1987 ■ **Genre:** Shoot-'em-up



» [Arcade] It's perhaps ironic that the biological horror stage offers some of the nicest sights in *Gigandes*.

■ **On first impressions, *Gigandes* is a mess.** The game is visually quite ugly for its time, and the tiny orb spacecraft fires some pretty weedy weaponry. Thankfully, the game improves massively when you learn what that orb design is for – your spacecraft is able to equip weapons on different parts of its body depending on where it makes contact with a power-up. Flying upwards into a power-up will provide you with that weapon on top of your craft, for example. Weapons can also be rotated around the body of the ship, allowing for four-way fire with all of your weapons. This provides a thoughtful approach to the shoot-'em-up genre that was atypical for the time.

You'll need the multi-directional fire, too – while the early levels consist largely of open air, assaults from all directions become more common and stage walls begin to appear, preventing frontal assaults on your enemies. It's a shame that Gigandes never made it home, as it could have been replicated pretty well on either the Mega Drive or PC Engine. But East Technology never developed any console games itself, and never appears to have had a big enough hit for other companies to pursue licensing.

CONVERTED ALTERNATIVE

HELLFIRE 1989

While *Hellfire* doesn't quite offer the same flexibility as *Gigandes* in terms of weapon choice, it does allow the player to switch between forwards, backwards, vertical and diagonal shooting to tackle some tricky stages. The excellent Mega Drive version is pretty easy to find and comes highly recommended.



CONVERTED ALTERNATIVE

MERCS 1989

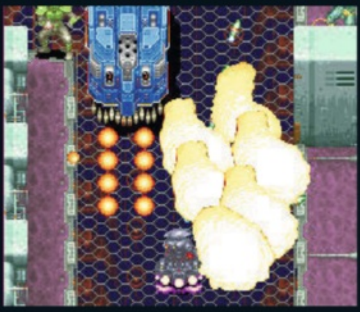
It's an obvious pick, but Capcom's game remains one of the best in its genre. While Sega's in-house Mega Drive conversion lacks the multiplayer of the arcade release, it made up for it with a brilliant original mode in which each character packs their own unique weaponry – just like *FixEight*.



FIXEIGHT

■ **Developer:** Toaplan ■ **Year:** 1992 ■ **Genre:** Shoot-'em-up

■ ***FixEight* is the sequel to Toaplan's cult hit *OutZone*, a top-down shooter which took the *Commando* formula and turned everything up to 11.** *FixEight* adopts the same gameplay as its predecessor, increasing the number of playable characters to eight and refining the weapon system. Like *OutZone*, *FixEight* allows players to utilise a forward-facing wide shot or a straight stream of shots that can be fired in any direction. However, new charge pads replace the single-use power-ups of *OutZone*, making for far less frustration when you're looking to change. The changes enable the player to enjoy the excellent stages, which are filled with a variety of excellent hazards. Beyond the standard enemies, you'll be forced to contend with moving mid-air platforms and a maze lined with buzzsaws. The music is relatively bland, never quite reaching the heights achieved by its predecessor's tunes. However, the game is fast-paced and packed with carnage, adding technical proficiency to the excellent sprite work to produce one of the best-looking shoot-'em-ups of the early Nineties.



» [Arcade] The huge explosions in *FixEight* convey a great sense of carnage, especially when battling multiple foes.

THE ULTIMATE GUIDE TO

PAC-LAND

Namco's jaunt through Pac-Land remains one of the most unusual of the iconic videogame character's arcade outings. Mike Bevan discovers why this Pac-Man sequel had legs. And a hat…





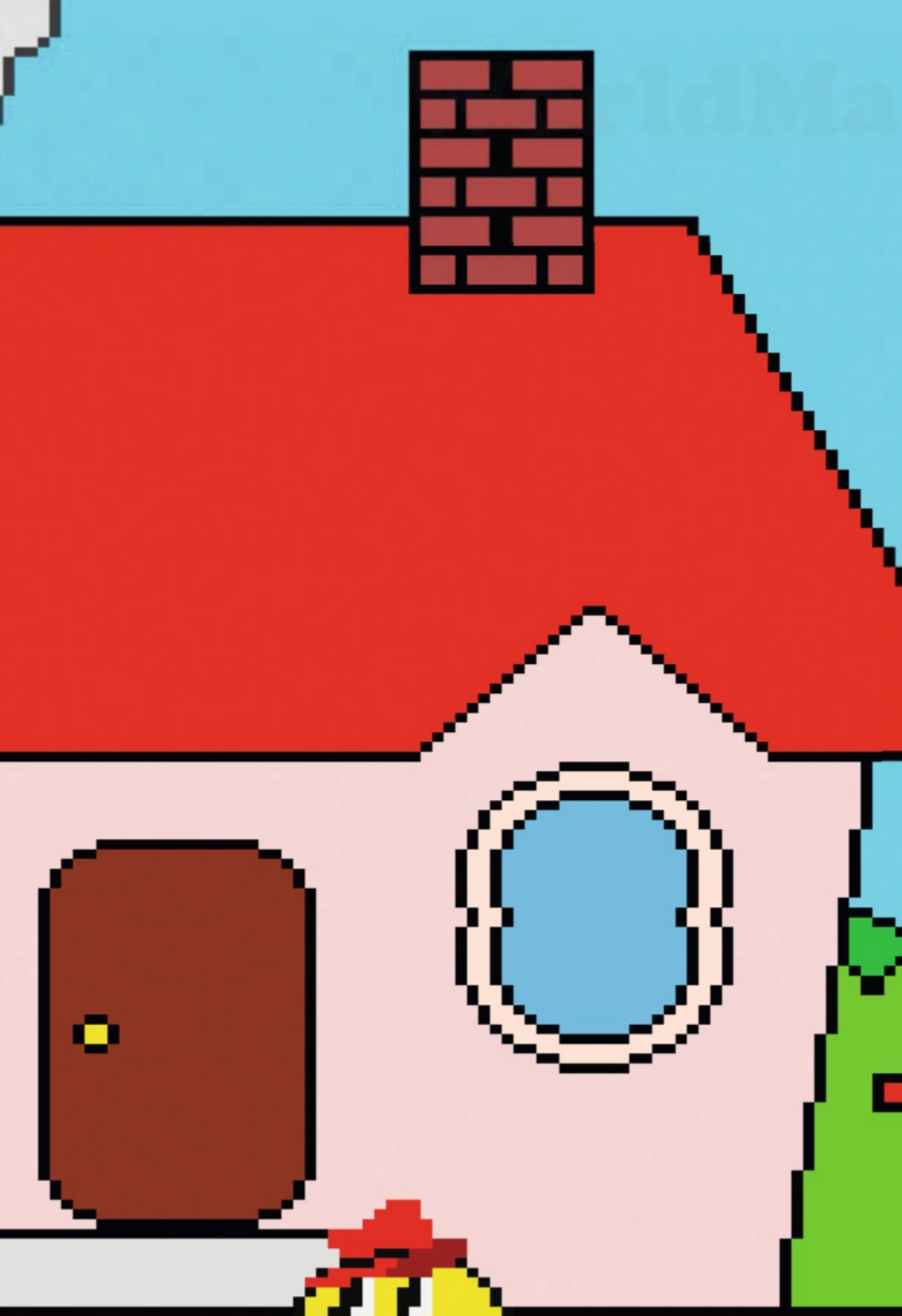
» [Arcade] These water spouts can knock you into the drink.



» [Arcade] The castle sections require Pac to collect keys to unlock the exit.



» [Arcade] Pac-Man looks extra pleased as he receives his magic boots.





» [Arcade] One of the things that pleases us most is the way Pac's hat flies up and down when he jumps…

As we sit down to tackle *Pac-Land* for the first time since it caught our eye nearly three decades ago in the arcade, one thing that strikes us is how much it resembles an interactive version of the Saturday morning cartoons of our youth. From that insanely catchy jingle (taken from the Hanna Barbera animated series that inspired the game) to the lovingly rendered sprites and colourful scrolling backgrounds, it's a slice of Eighties coin-op eye-candy. In fact, it's probably the first case we can think of an arcade game based on a cartoon based on an arcade game, if you get our drift. And as we journey deeper into Pac-Man's cheerful homeland, the other thing that occurs to us is that there's a familiar feeling about all this that we've definitely experienced somewhere else, with a couple of Italian plumbers rather than an anthropomorphic yellow blob and a bunch of coloured ghosts. But more on that later.

The original arcade game was in some ways a bit of an oddity, a sequel that completely switched genres from the abstract maze games that came before it to a scrolling action-adventure, in a cabinet that didn't even feature a joystick controller. Instead players were presented with a couple of buttons to run left or right and another to jump, simplifying things even further than the four-way control scheme of the original. And that's it… in *Pac-Land*, our power-pellet popping hero's main task is simply to run from left to right, really fast. And after he's dropped off a friendly fairy cannily hidden under his hat, turn around and run the other way to reach a welcome intermission with Ms (now Mrs?) Pac-Man, Jr Pac-Man and a couple of Pac-pets.

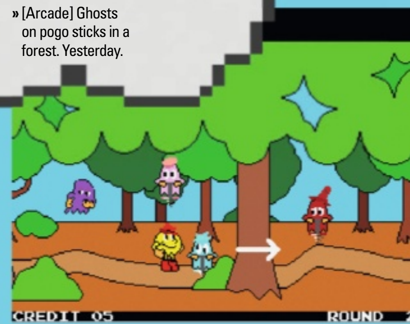
A good analogy for the game would be a sort of cross between *Hunchback* and *Track & Field*, with Pac dodging various hazards including a whole town full of ghosts who have taken to driving cars and piloting aeroplanes, and jumping obstacles



» [Arcade] Approaching a scary water jump.



» [Arcade] A leisurely open-top bus journey, *Pac-Land* style.



» [Arcade] Ghosts on pogo sticks in a forest. Yesterday.

▶ like fire hydrants, cacti, quicksand and humungous water jumps. The last feature is where the *Track & Field* influence comes in, as you double-tap the run button to get a good burst of speed, hit a springboard to make the leap and continue to frantically button-bash to remain airborne. And it's a lot of fun, if a tad frustrating when you fail and end up in the drink. Daley Thompson never had to put up with this sort of thing…

It's all very simplistic of course, but that's part of *Pac-Land*'s charm. Namco's three-button mini-adventure is a master-class in designing an easy-to-learn but deceptively challenging coin-grabber. It lures you into a false sense of security with its kid-friendly environments and jaunty melodies, then clobbers you with a tight time-limit, tricky jumps and even a few devious puzzles. And then there's the ghosts, one of which, Sue, chases you through the entire game, killing you outright if you hang around. Others drop baby phantoms out of windows and aircraft, or pilot flying saucers in awkward circular patterns above you. Luckily, this being a *Pac-Man* game they have the weakness of being chomped once you grab a power-pellet. But it's your only reprieve in a game that's constantly stacking the odds against you, especially on later 'trips' (the game's terminology for levels) where double-tapping that run button and putting your little Pac-legs to the metal is your only hope of reaching the fairy kingdom intact. There isn't even a continue option – lose all your lives and it's back to the title screen, although you can select later levels at the start.

One of *Pac-Land*'s joys is how breezy it feels in every playthrough. Each 'trip' is split into several bite-sized rounds punctuated by reaching a church (the Pac-folk would seem to be a religious lot) and a 'Break Time' sign, which usually takes only a minute or so to reach. A running Pac can leap a lot higher, meaning maintaining your speed and timing your jumps without slowing down is key. And making it unscathed through a round at full tilt, noshing bonus fruit and hurdling ghosts and fire hydrants like a professional Pac-thlete is tremendously satisfying. Probably the most enjoyable bit comes after reaching the Fairy Queen's flower-border when she grants you a pair of magic boots. These let Pac jump in mid-air, meaning lots of fruity bonuses as you sail above those pesky water traps and ghosties on the way back to your Pac-family. Watch out, though, as some return trips deliberately give you just enough time to reach a power-pellet to fend off a pursuing Sue. Sneaky old Namco.

We also rather like Pac's newfound obsession with hats, which links us nicely into talking about the fun little secrets in the game. Early on, jumping on and pushing fire hydrants in the correct order awards you with a protective helmet, which is handy for preventing death by falling baby ghosts, awarding you bonus points in the process. There are level

A SHORT HISTORY OF PAC-MAN

A selection of Pac-Man's best and worst moments



PAC-MAN (1980)

Toru Iwatani's seminal arcade mascot famously came to him after seeing a pizza with a slice cut out of its side. The game that started the franchise introduced us to the delights of dot-guzzling, fruit snacking, power-pellets and the pesky ghosts, each with a different behaviour pattern and personality.

MS PAC-MAN (1981)

Regarded as an improvement over the original, *Ms Pac-Man* began as a clone called *Crazy Otto*, before Namco picked up the rights from General Computer Corporation and Midway. The game featured more intelligent ghosts, moving fruit and the first appearance of Sue.





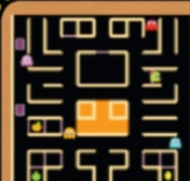
SUPER-PAC MAN (1982)

Namco's first true sequel was a disappointing affair that messed with the honed gameplay of the prequels, removing the dots and cluttering up the playfield with superfluous items. These included keys that had to be eaten to open doors and power-pellets that tripled his size and gave him an extra burst of speed.

PAC-MAN PLUS (1982)

This was a second attempt by Bally-Midway to cash-in after *Ms Pac-Man* became its best-selling coin-op. Apart from being faster, giving the monsters funny hats and sticking in cans of Coke for Pac to drink, like *Super Pac-Man*, it was nowhere near as popular as its feminine prequel.





PAC & PAL (1983)

One of the weirdest of Namco's sequels, this is a *Pac-Man* game without dot-eating or power-pills, with Pac collecting playing cards and keys to access collectables. Throughout the game he also had to compete with his so-called pal, a bug-eyed green blob who constantly tried to make off with his fruity loot.

JR PAC-MAN (1983)

Another unofficial sequel from Midway, and starring a Pac-relative in a propeller beanie, *Jr Pac-Man* had mazes that were so big that the screen had to scroll as you moved around. The lack of escape tunnels and inability to see the ghosts at all times made it a very difficult game.



PIXEL PERFECT

The wonderfully colourful characters of Pac-Land





PACMANIA (1987)

Arriving three years after *Pac-Land*, this was a graphically reinvigorated return to the original concept, with isometric playfields and pleasing 3D renditions of Pac and Co. Pac-Man was now given the ability to jump over ghosts, but as with *Jr Pac-Man*, the scrolling made it much harder to avoid being caught.

PAC-MAN 2: THE NEW ADVENTURES (1994)

In this console adventure, rather than controlling Pac directly, players used a slingshot armed with pellets to interact with him. Hilariously, he also had a number of AI-controlled emotions, including grumpiness if you pestered him…





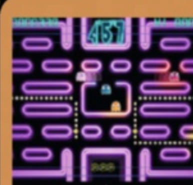
PAC-MAN WORLD (1999)

This console release saw Pac-Man gobbling his way through a 3D platform quest to rescue his family from his ghostly adversaries. Though derivative of earlier games like *Sonic* and *Mario 64*, it had plenty for Pac-fans to enjoy, and was successful enough to spawn two sequels.

PAC-MAN VS (2003)

This GameCube release was notable for the involvement of Shigeru Miyamoto, a long-time *Pac-Man* fan. Taking advantage of the GameCube to GBA link cable, it granted three players control of the ghosts against a player controlling Pac-Man with the GBA.





PAC-MAN CHAMPIONSHIP EDITION (2007)

This sequel saw the return of Toru Iwatani, and was his final game before retirement. It's the best classic-style *Pac-Man* game for years, with a time-attack structure and nifty new features like expanding mazes, ghost-chain bonuses, 'bombs' and an awesome Pac 'bullet-time' feature.

PAC-MAN BATTLE ROYALE (2011)

Battle Royale allows up to four players to take control of different Pac-Men. Played over a series of rounds, collisions send you bouncing across the screen, while power-pellets double your size, allowing you to munch on your opponents as well as the ghosts.



PAC-LAND CONVERSIONS

Unsurprisingly, Pac-Land turned up in an impressive number of ports…



SHARP X68000

On Sharp's Japanese super-computer, *Pac-Land* looks and plays like a dream, with proper joystick control for Pac. We actually prefer this to the coin-op, as the water jumps seem a lot less fiddly to get across now, making for a more enjoyable game.





AMIGA

You'd think that the Amiga port would be superior to the C64 version, eh? Surprisingly, while the C64 had lovely smooth scrolling and near-perfect controls, here everything's way too juddery to be much fun. A real wasted opportunity.



PC ENGINE/TG-16

Although far superior to the Famicom outing, the TurboGrafx-16 version shares the Famicom's daft control scheme, but thankfully there's an option to change it to 'lever control', which is much better. Almost as good as the X68000 port.



FAMICOM

Pac-Land never made it to the Westernised NES console, remaining a Japan-only release on the Famicom. It plays fine, but suffers from bland looks and awkward controls that used the buttons to run left and right and the D-pad to jump.



SPECTRUM

The coin-op's colourful vistas were always going to problematic for the Speccy, and as with the Amstrad version, it ended up being a flick-screen adventure. It's more like *Dizzy* than *Pac-Land*, and unless you have 128K there's no music either.



"I think I got the easy gig as the C64 hardware was so straightforward to program"

Alan Ogg



▶ warps and bonus lives hidden in tree stumps and cacti to discover, and even the ability to turn invisible and invincible to Inky, Pinky, Clyde and his gang. Extra fruit and collectables can also be summoned by jumping on certain items and areas, and even the Flagship from *Galaxian* turns up as a bonus item. There's certainly plenty of scope here for players interested in upping and perfecting their high scores, as with the earlier *Pac-Man* games. And there's a nice amount of variety in the stages, from towns, forests and deserts to castles where Pac needs to pick up keys to progress through locked doors – later on these are played in complete darkness with a torchlight effect around Pac. Luckily these castle areas are always skipped in the return trips.

The home computer and console conversions of *Pac-Land* are a bit of a mixed bag, with the frantic button-bashing of the coin-op translated to desperate joystick-waggling over those water jumps. In the UK, publisher Quicksilva was lucky enough to grab the rights from Namco, leading to the C64, Spectrum, MSX and Amstrad CPC ports, converted by Scottish developer Gannon Designs. Despite a few tweaks, like the inability to jump on the heads of the ghosts, the C64 version was a standout. The game was never as popular as the original *Pac-Man*, but *Pac-Land*'s legacy is more important than you might think. In our interview with *Pac-Man* creator Toru Iwatani back in issue 61 of **RG**, he told us that he felt the game – which he was also involved with – pioneered horizontally scrolling arcade games, something perhaps evident in later titles like *Ghosts 'N' Goblins*, *Alex Kidd* and *Wonder Boy*. And according to Iwatani, *Pac-Land*'s biggest accolade of all was that it influenced Shigeru Miyamoto to create *Super Mario Bros*. Not a bad pedigree for a game based on a Saturday morning kids cartoon…



PLAYSTATION

Pac-Land appears on the *Namco Museum Volume 4* compilation with cult shooters *Ordyne* and *Assault* among others, making it a good investment for arcade aficionados. Be sure to change the Famicom-style control system.



ATARI ST

We get the feeling that the shoddy Amiga port was converted from this version, both being coded by conversion outfit Mr Micro rather than Gannon Designs. It also features the same ropey character animations…



AMSTRAD CPC

A bit of a missed opportunity, as the CPC port looks as nice as the C64 version and sports equally good music. But it lacks the Commodore's scrolling, being cut down to a series of single screens, and is noticeably sluggish to play.



» [C64] Alan Ogg got no help from Namco to create his conversion.

ALAN OGG

Behind the scenes of the great C64 port



How did Gannon Designs end up working on the *Pac-Land* conversions?
Negotiations for doing *Pac-Land* were concluded before I joined Gannon Designs so the kudos for landing the contract would be down to Martin [Gannon]. I got started on a version of *The Hunt For Red October* but that fell through before we really got into it and I got pulled in to help Martin finish off *The Tube* so we could get started on *Pac-Land*. I only worked on coding the C64 version, although we all cooperated on the playability aspects across all the platforms. To be honest I think I got the easy gig as the C64 hardware was so much more straightforward to program than the others.

How much support did you receive from Namco during the conversion process?
We got no help from Namco at all except a photocopy of a manual written in Japanese, which I saw only once. All we had was one arcade machine and it got hammered to death while we mapped the game out as best we could by playing it constantly. Some people might think that getting paid to play videogames was some trip but just try playing the same game for hours and hours, day after day and the fun soon wears off…

A few of the levels and secrets from the arcade game were noticeably absent in the C64 version. Was this because of lack of time, or wanting to get the game into a single load?
Some trips were omitted because of time pressures. Space was tight though, and even with what we did get done that 64K of RAM was literally full to bursting and we had no desire to do a multi-load off tape. We ended up having to compress some of the sprite and level data and were even using the 6502 stack for running code in, which was really pushing our luck. Even the tape loader over-wrote its own code at the end of the load.

Leaving out the standing on ghosts was Martin's call but again it was a time thing. Since the pushing the hydrant thing for the hard-hat and tree-stump level jumps were pretty tricky to do – almost like Easter Eggs – they were left off the must-have list till nearer the end and you know how that went. The coding would have been similar to how I did the quicksand but I suspect we'd never have been able to fit them in anyway.

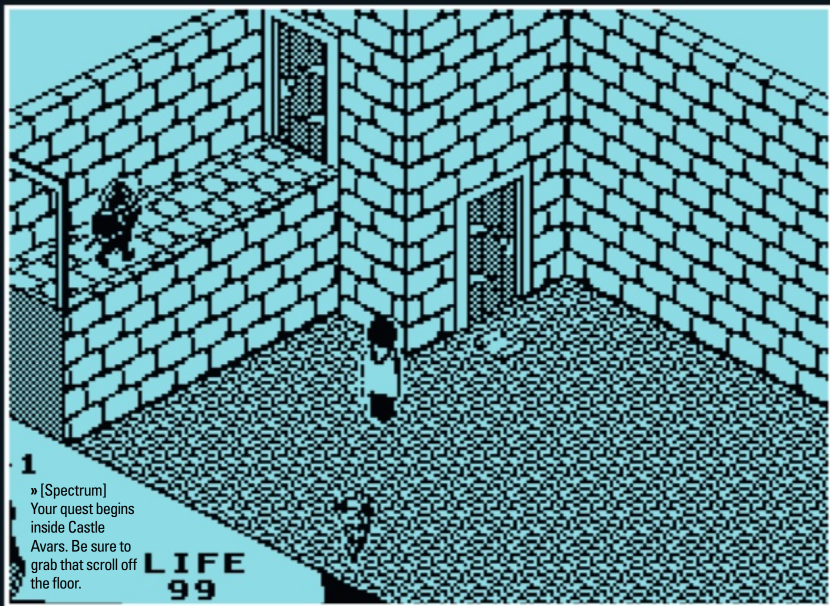
Did you come up against any problems or technical hiccups during the conversion process?
The main technical challenge on the C64 was getting the full-screen, sideways scrolling to look smooth. All the sprite position updates had to happen during screen fly-back, which is when the video beam jumps from the bottom of the screen back to the top to start redrawing the next frame, but that also triggered the music and sound effects, and there simply wasn't enough time to do the scroll in one go without getting a screen glitch.

Lack of space was the other huge challenge and it also pushed us to use 40-column text mode, which meant all the graphic backgrounds had to be designed using custom text characters, and I was amazed at how well that turned out. I was very proud of what we produced, especially given my lack of games experience, and was well chuffed with the ratings it got.

Fairlight I & II

In early 1985, 23-year-old Swede Bo Jangeborg visited England for seven days and ended up staying for seven months. During this time he created Fairlight, one of the most memorable adventures of the 8-bit era. Martyn Carroll talks to Bo about Fairlight, its controversial sequel, and why he never made another game

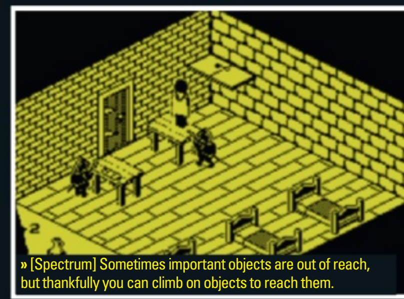




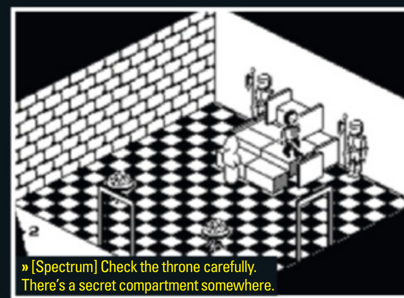
» [Spectrum] Your quest begins inside Castle Avars. Be sure to grab that scroll off the floor.



» Bo Jangeborg, the brilliance behind the *Fairlight* games.



» [Spectrum] Sometimes important objects are out of reach, but thankfully you can climb on objects to reach them.



» [Spectrum] Check the throne carefully. There's a secret compartment somewhere.



IN THE KNOW

- » **PUBLISHER:** SOFTEK (THE EDGE)
- » **DEVELOPER:** BO JANGEBORG
- » **RELEASED:** 1985-1986
- » **PLATFORM:** VARIOUS
- » **GENRE:** ARCADE ADVENTURE

The origins of *Fairlight* can be traced back to two programs Bo Jangeborg produced shortly after acquiring a Spectrum in 1983: a graphics utility called *Grax* and a shoot-'em-up called *Shoot-'Em-Down*.

"*Grax* was basically a toolset for doing fill-ins, circles, lines and stuff like that," explains Bo. "It was a lot faster that you could do in BASIC. A friend of mine was interested in text adventures and wanted to have some still images in his game, so I developed the toolset to help him with that. And I kept on developing *Grax* and later on I used it to draw all of the backdrops in *Fairlight*."

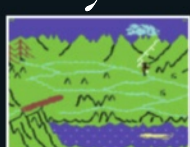
Grax also became the foundation for *The Artist*, Bo's graphics package for the Spectrum. "When put together with a working interface, those tools made a decent little paint program," he says, before revealing how *The Artist* led to that elongated stay in the UK and ultimately the creation of *Fairlight*. "I got *The Artist* to a state where I thought some company might actually consider releasing it. I went over to England to get in touch with some companies and of those I spoke to Softek seemed interested. So we made a deal for *The Artist*, and while in London the Softek guys showed me what games they were working on. They were trying to emulate what Ultimate Play The Game was doing with *Knight Lore* and *Alien 8*."

As revealed in last issue's *Knight Lore* feature, Softek boss Tim Langdell and his outfit were struggling to copy Ultimate's groundbreaking Filmation system. Fascinated, Bo went back to his hotel and worked up a demo overnight. This is where *Shoot-'Em-Down* came in, as he appropriated the sprite routine he'd developed for his earlier game to create a smooth isometric effect. The guys at Softek were knocked for six. "I was supposed to be there for a week but they were so stunned by what I was showing them and how quickly I demonstrated how this kind of isometric 3D game could be done that we started working on *Fairlight* there and then. I actually stayed in England for seven months."

A few quick phone calls home were made to explain matters and that was that. He swapped Gothenburg for London and then London for the land of *Fairlight*. "I didn't have a full-time job at the time," he explains. "I had been planning to open a little computer shop in Sweden with a couple of friends, but that went on the ▶



Top Tek A selection of the choicest titles released by Softek over the years



FIREQUEST

SYSTEM: C64
YEAR: 1984

■ This is a sequel to *UGH!*, the prehistoric romp that first gained popularity on the Dragon 32. These 'further adventures' give our caveman hero much more to do, with each screen offering up tricky challenges involving spiders, bats, volcanoes and angry storm clouds.



BRIAN BLOODAXE

SYSTEM: SPECTRUM, CPC, C64 **YEAR:** 1985

■ A wacky platformer developed by Charles Bystram. It's silly but not particularly clever, although the option to carry objects and use them to solve puzzles does lift it above the rest. It's best remembered for its big, colourful graphics.



BOBBY BEARING

SYSTEM: SPECTRUM, CPC, C64 **YEAR:** 1986

■ While often compared to *Spindizzy*, developers Robert Figgins and Trevor Figgins cite *Knight Lore* as their chief inspiration. The impressive isometric graphics system was clearly deserving of its very own daft moniker – Curvispace 3D!



INSIDE OUTING

SYSTEM: SPECTRUM, CPC, C64 **YEAR:** 1986

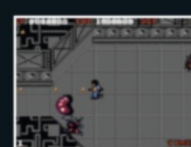
■ Also known as *Raffles* and the somewhat less snappy *Devon Aire in the Hidden Diamond Caper*, this classy release proved that isometric adventures could still entertain and even amaze when done well. You explore a large mansion in search of hidden jewels.



GARFIELD

SYSTEM: VARIOUS
YEAR: 1988

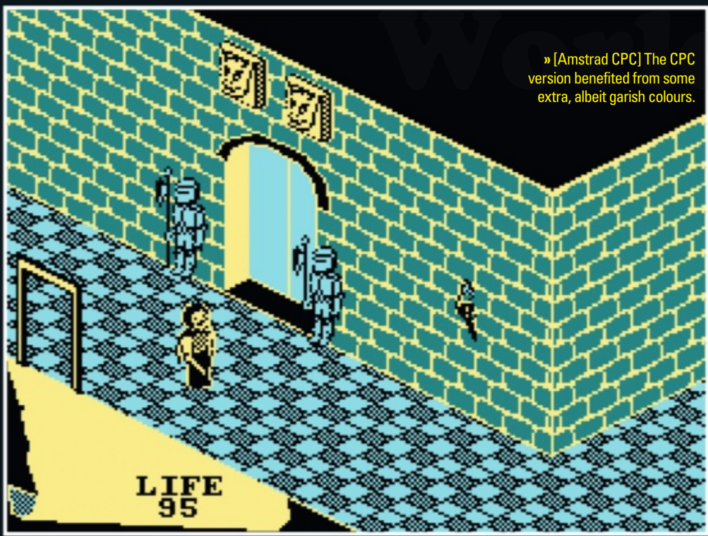
■ A rather shrewd move saw Softek license the ever-popular cartoon cat for inclusion in a couple of games. The first, subtitled *Big Fat Hairy Deal*, is the pick of the two and succeeds in bringing the strip to life using large, detailed graphics and plenty of affable humour.



ALIEN SYNDROME

SYSTEM: VARIOUS
YEAR: 1988

■ Softek released several coin-op licenses including Konami's *Shao-Lin's Road* and Taito's *Soldier Of Light*. This was one of the most successful coin-op hits on the C64. That said, all of the versions are admirably close to the arcade originals.



» [Amstrad CPC] The CPC version benefited from some extra, albeit garish colours.



DEVELOPER HIGHLIGHTS

THE ARTIST
(PICTURED)
SYSTEM: SPECTRUM
YEAR: 1985

FAIRLIGHT
SYSTEM: SPECTRUM, CPC, PCW, C64
YEAR: 1985

FAIRLIGHT II
SYSTEM: SPECTRUM, CPC, PCW
YEAR: 1986





» Classy and understated packaging was part of *Fairlight*'s charm.

backburner while I pursued this gaming career instead. I stayed with the Langdells at their house and went to work with them each day at their office in Covent Garden. All of *Fairlight* was written while I was living in London. It was a fun experience."

Besides providing Bo with a job and a place to stay, Tim Langdell also contributed plot elements to *Fairlight*. "We discussed things between us, but I basically did the game design and the story while Tim wrote the back-story for the booklet that came with the game." As for influences on the story, which saw our cloaked hero Isvar explore the mysterious Castle Avars in search of a magical book, Bo has nothing specific to cite. "I was into *The Lord Of The Rings* and all that stuff, but I can't point to any particular book or film. It was all from my imagination. I was always interested in games, playing board games from an early age. When I was around 16 I started playing *Dungeons & Dragons*. I'd been running a lot of role-playing campaigns based on *D&D* so I was used to being a dungeon master and I was thinking up adventures regularly before I even started using computers."

Fairlight is well remembered for its striking visuals and in this department Bo benefited from a little in-house help. "I did some of the graphics," he says. "But Softek had a contract with a guy called Jack Wilkes, who had actually been working as a plumber before. He was a really nice guy and really good with graphics, so he did a lot of the moving graphics, the animation. He did some nice things like the man-eating plants and the guards who disappeared into their helmets when you killed them, then popped back up again after a while. On the animation side I only did the main character."

Fairlight was released for the Spectrum in late 1985 (with Amstrad CPC, Amstrad PCW and Commodore 64 versions arriving the following year, although Bo had nothing to do with these ports). The game garnered great press, particularly from *Sinclair User* magazine, which heaped praise on the graphics, lauding them as "streets ahead of *Knight Lore* and *Alien 8*". Not bad when you consider that it was precisely these two games that Softek had being trying to replicate in the first place.

Unsurprisingly, that succulent quote made it onto the game's inlay.

Also gracing the inlay in prominent fashion was Bo's name. In fact, the game was effectively titled 'Fairlight By Bo Jangeborg'. So prominent was his name that it clearly overshadowed both Softek and The Edge, the label on which the game was released. The ensuing success of the game ensured that Bo's name became ingrained in the gaming consciousness.

Bo was clearly a key asset for Softek and this would eventually lead to a falling out during the development of the *Fairlight* sequel. "*Fairlight II* is where my problems with the Softek guys really started," he says. "Before the game was completed they tried to have me sign a long term contract with them, which I wasn't pleased with as I hadn't been all that pleased with how the relationship was developing towards the end of *Fairlight*. I was maybe looking at going to some other companies. We had made a deal right from the beginning that I would get straight royalty payments. I didn't get anything up-front, so they withheld royalties I was due to try and force me into signing a contract with them. I basically said 'screw them!'"

A legal battle began but it never made it to court. "I had to deposit something like £5,000 in the British courts just to be able to pursue the matter which was a pain. In the final settlement we agreed that, in order for me to get anything out of them at all, I signed over the rights to the *Fairlight* name. This is something I now regret. It was done as a mediation but I wasn't too happy with the deal. With hindsight it would have been better if I'd given up the money and retained the rights."

Prior to the legal wrangles, *Fairlight II* was shaping up as an ambitious follow-up that was far more expansive than the original. It was designed with the Spectrum 128K computer in mind – on 48K models it was split into two parts that loaded separately. Bo opted to return to his home country to begin crafting the sequel. "For *Fairlight II* I was working with a graphic artist back in Sweden, a friend of mine named Niclas Osterlin. I did most of the game in Sweden then came over to England for the last few months to finish it off. The plan was to make it more of the same, but make it bigger and better."

Sadly the contract dispute began before the game was properly finished. "There was a couple of weeks' work left on the game to iron out the last few bugs and get it released," he reveals. "But when the relationship fell apart no more development was done on it and they released it anyway. They knew full well that the game wasn't in a finished state."

In its released form, *Fairlight II* featured a number of minor glitches but the game-breaker didn't occur until the very end. Basically there was no way of opening the locked door that led to the final room, and therefore it was impossible to complete the quest. As this bug occurred at the conclusion, reviewers were unaware and the game received strong reviews when it arrived at the end of 1986. *Sinclair User* called it a "stunning and epic sequel".

The fallout also ensured that the proposed *Fairlight III* and possibly further sequels were scrapped. This is something that Bo regrets. "I wanted to return to *Fairlight* and I had plans on going a lot further with that world, expanding on it and making it into more of a proper role-playing series. There wasn't a specific plan on doing a set number of games but I would have probably continued making a lot of games using that system had I kept developing it. That was clearly an idea at that point and who knows where that would have ended up. It would have probably been a mixture of isometric 3D and ideas I'd picked up from the *Ultima* series. Maybe even opening it up so that other people could use it to develop games too. Who knows?"



» [Amstrad PCW] According to Softek, *Fairlight* was a big seller on Amstrad's PCW range.

Softek later released *Fairlight: The Legend* on the Spectrum and Amstrad CPC, although this was just a cut-price collection of the two titles. Bo meanwhile began work on a new Spectrum project for Nexus Productions, a publisher that had links to Telecomsoft. Called *Resolution*, the game was an ambitious *Defender*-style shooter that used programming tricks to reduce the colour clash effect. "I had a working demo but in the end that company fell through. I got quite disillusioned with the business at that point and I couldn't get around to finishing the game."

And so Bo walked away from the industry in which his name had become well-known and respected. He continued programming and later developed *Flash,* a paint package bundled with the SAM Coupé in 1989. Since then he has worked on business admin software and has no desire to get back into gaming. "Time has run away in a sense," he admits. "You need a company and really good resources behind you and I don't feel like my programming skills and my willpower are quite there anymore. I did have a go at doing a strategy game a few years ago because I felt that was something I'd be able to do on my own but that didn't pan out. I probably still could do that but we'll see what happens. You never know."

But there's still *Fairlight*. Always *Fairlight*. A game that began life as a clone but evolved into a rich, atmospheric classic in its own right – something that fans are keen to remind Bo of. "I still get a few emails from players each month and I really enjoy that," he says. "It has always been pleasing to receive feedback about the *Fairlight* games, to hear that people played them and enjoyed them." ✱



» [Amstrad PCW] The sequel opened up immediately after the events of the first game, with Isvar standing outside the castle.



» [Spectrum] Here it is – the glitchy, unlockable door through which none shall pass.

The End is Wry

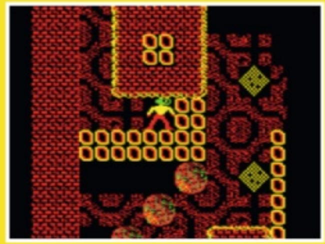
Five games which, like Fairlight II, were impossible for players to complete due to bugs



JET SET WILLY

SYSTEM: SPECTRUM **YEAR:** 1984

■ As bugged games go this is perhaps the most infamous. The rush to get the game out the door resulted in several bugs, one of which prevented you from completing the game. The Commodore 64, BBC Micro and Dragon 32 versions were also unfinishable.



REPTON 2

SYSTEM: BBC/ELECTRON **YEAR:** 1985

■ This sequel was made impossible by a placement bug which meant that one of the diamonds could not be collected and therefore it couldn't be completed. Awkwardly, Superior Software offered a cash prize to the first person to finish the game.



HEARTLAND

SYSTEM: SPECTRUM **YEAR:** 1986

■ This Odin release suffered from a brilliantly ironic bug. The plot involved gathering up six pages that had been torn from a book, yet when you grabbed the final page so that the story's conclusion could be finally revealed – the game crashed!



DYNAMITE DAN II

SYSTEM: SPECTRUM **YEAR:** 1986

■ Not so much a bug, but the game's inlay mentioned that you needed to blow up Blitzen's base on the final island using a bomb. While there was a bomb, there wasn't anywhere to plant it and the game just looped back to the beginning.



RASTAN

SYSTEM: COMMODORE 64 **YEAR:** 1987

■ Anyone who played this conversion will remember the rather problematic rope swings where split-second timing (and a dollop of luck) was required. Yet there was one bugged swing that was simply impassable, resulting in a big fat fail every time.



» [Spectrum] The *Fairlight II* end-screen seems to show the evil Dark Lord fly away (in bat form) and teases another chapter.

A CRYSTAL CLEAR DESIGN

Formed in 1982 within the halls of Manchester University, Crystal Computing published several games before transforming into Design Design two years later. Graeme Mason explores the trials and tribulations of this underrated 8-bit developer…



» Like most, Design Design released a compilation of its greatest hits.



» [Spectrum] *Halls Of The Things* was Crystal Computing's biggest hit.

Many people behind the booming games software industry of the early Eighties began their love of computers while studying at university and the men behind Crystal Computing were no exception. "Chris Clarke and I lived in the same corridor in halls of residence at Manchester Uni," starts co-founder Ian Stamp, "and we came up with the name after seeing an advertisement for a similarly named company in a magazine." Ian was in the middle of a computer course although, as was not uncommon for the time, did not own one himself: "But I bought a ZX81 once we started Crystal. I needed it then."

Officially Clarke and Ian were equal partners and attended several trade shows with two other colleagues, usually in Ian's 1970 Ford Escort, tightly packed with bulky televisions, ZX81s and cassettes. "We spent a lot of time copying cassettes on our hi-fis" smiles Ian, "and would often still be copying the night before a trade show."

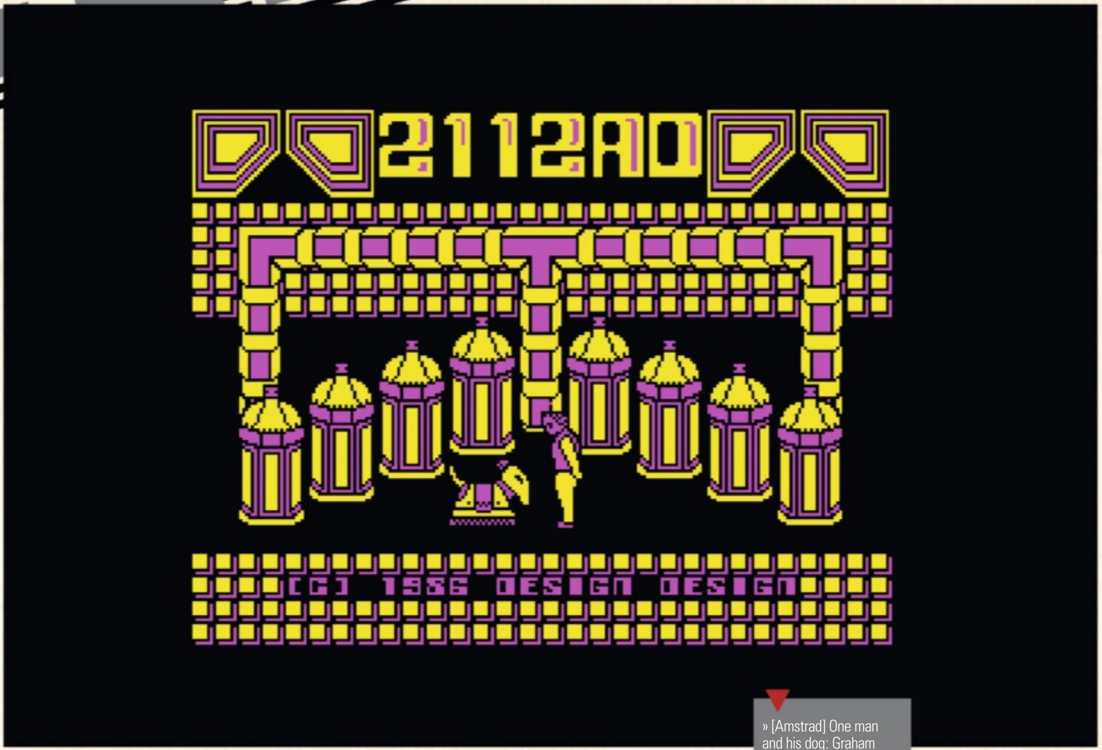
Ian's chief desire was to code games on the Sinclair machine. "But Chris wanted me to do it all while he concentrated on marketing. I didn't have the time or inclination to do that once we had graduated from the ZX81 to the Spectrum." With Ian more concerned with achieving his degree and disinterested in games and low-level coding, the young entrepreneurs parted company early in 1983 after just one year in business together. "I made quite a lot of money in that short time," recalls Ian, "but it was obvious the industry was growing fast and we didn't have the resources, time or skills to keep up."

Already working for Crystal was Graham Stafford, also of the same halls of residence at Manchester University. "Chris [Clarke] was the lab partner of Charles Cecil," remembers Graham, "who was involved in Artic Computing at the time. Chris went to a trade show with Charles and thought 'I could do this' which inspired him to start Crystal. Chris approached anyone he saw that could code a game well, me included, as his view was, quite rightly, that the more we published the more successful

STATE OF MIND

The high score table from Simon Brattel's last game, *Forbidden Planet*, is a poignant one. Taking lyrics from the various songs he was listening to at the time the table makes an intriguing read, before revealing its author's state of mind in the final line: 'And my spirit is crying for leaving'. Simon left Design Design shortly after *Dark Star*'s sequel was released.





» [Amstrad] One man and his dog: Graham Stafford's *2112 AD.*

IN THE KNOW

- Design Design was originally a name used by Simon Brattel as far back as 1973.
- Graham Stafford's first computer was a Compukit UK101, which he still owns today.
- *Invasion Of The Body Snatchas!* was originally spelt the correct way until Chris Clarke insisted that the name be changed for copyright reasons.
- Simon Brattel's own homebrew computers were used for developing Spectrum games. They were assigned generally random names from whatever was on TV or popular at the time. The first one was called 'Lurch' after the character from *The Addams Family* while follow up 'Basil' was inspired by sitcom *Fawlty Towers*.
- Simon Brattel claimed Basil cost a mere £500 to create, a drop in the ocean compared to the reported £7,000 per machine others were paying for hi-tech Sage Computers.
- According to Simon, Design Design at one point had several games in the South African games chart. "But we never sold one game there," he smiles.
- In contrast to its great friendship with *Crash*, Design Design had a spiky relationship with *C&VG*, often taking the opportunity to ridicule the mag in *Spectacle*.
- The isometric adventure *Nexor*'s original name was *Nemesis*. It was changed when Konami threatened legal action over its arcade game of the same name.

"We spent a lot of time copying cassettes on our hi-fis"

IAN STAMP ON THE EARLY DAYS OF CRYSTAL

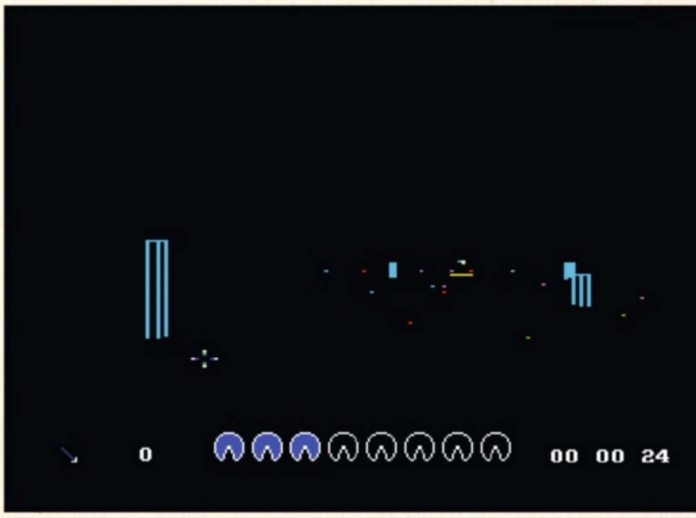
we would be." Then, shortly after Graham, another key figure in the history of the company would join who would go on to code some of the most technically brilliant Spectrum games of the Eighties: Simon Brattel. "I always dreamed about having a computer, probably from something like the Goodies where they had these bloody great things with huge tapes going round," laughs Simon. At the university, Simon had already bumped into Neil Mottershead, who at this stage (1981) he readily admits was 'a much better programmer than I was.' Simon's talent and main interest lay in computer design; he had created his own computers from what parts he could acquire and it was on one such homebrew machine that Neil Mottershead adapted an assembler utility called Zeus.

Around the same time, Simon bumped into a 'strange chap' at a local bookstore. "He was perusing the 6502 section and I was in the Z80," he says with a smile. "We took the piss out of each other and then about a year later we ended up meeting again." It was none other than Crystal's Graham Stafford and the result of their meeting was Neil and Simon creating a version of the Zeus assembler for Crystal Computing to market. "They saw themselves as entrepreneurs, with their own software house and we were just two guys who happened to know a bit about programming."

After Zeus, Simon began working on his first game for Crystal along with Neil Mottershead. "We weren't working for them, we were still students, pissing around; I remember Neil and I dimly thinking that we didn't like any of the games out there, and wondering if we could do better." Together with another student, Martin Horsley, Simon became fascinated by a game Neil was playing on his Nascom. "It was called *Keys Of Kraal* and was an early maze game, actually a very good game for the time, very much wandering around a maze and using magic." Call it cockiness, or just complete faith in their own abilities, but the three students were soon thinking how they could improve the game with real-time combat and more monsters. "We tried to do things that had never been done before," recalls



» Design Design's adverts were beautifully, erm, designed.



» [Spectrum] *Dark Star*'s follow up, *Forbidden Planet.*

Simon, "like having objects and creatures that actually existed off the screen and making sure the enemies had the same weapons as you did, which was quite rare then." *Halls Of The Things* for the Spectrum became a huge hit for Crystal, catapulting it up the software house league. "We wrote it for fun, designing the game we would like to play," says Simon, "and I remember one evening we took it up to one of the common rooms at the university halls of residence. Over the course of four hours it was full of people who were just blown away, fighting over the Spectrum to have a go. The three of us backed away, staring wide-eyed at this roomful of people and said to each other 'we might have something here!'" Graham Stafford remembers seeing Halls for the first time: "The original version was on Simon's homebrew machine in black and white, but quite well developed by the time Chris and I first saw it. It was fast, varied and had brilliant gameplay."

By the time *Halls* was released Simon was busy working on his next game, a fast shoot-'em-up, *slightly* influenced by a famous arcade game. "I always liked *Defender*," he admits, "but could never bloody play it. It was too fast and I didn't like the controls. But I thought it was brilliant, a great piece of programming." Simon's goal was to create a frame-locked version on the Spectrum with as much speed as possible to show that such games could be created on the Sinclair computer. Already utilising devious tricks and techniques to get the most out of the machine such as using code fragments rather than character-drawn routines and graphical data to save memory, *Invasion Of The Body Snatchas!* was a more defined indicator of what lay ahead for the coder.

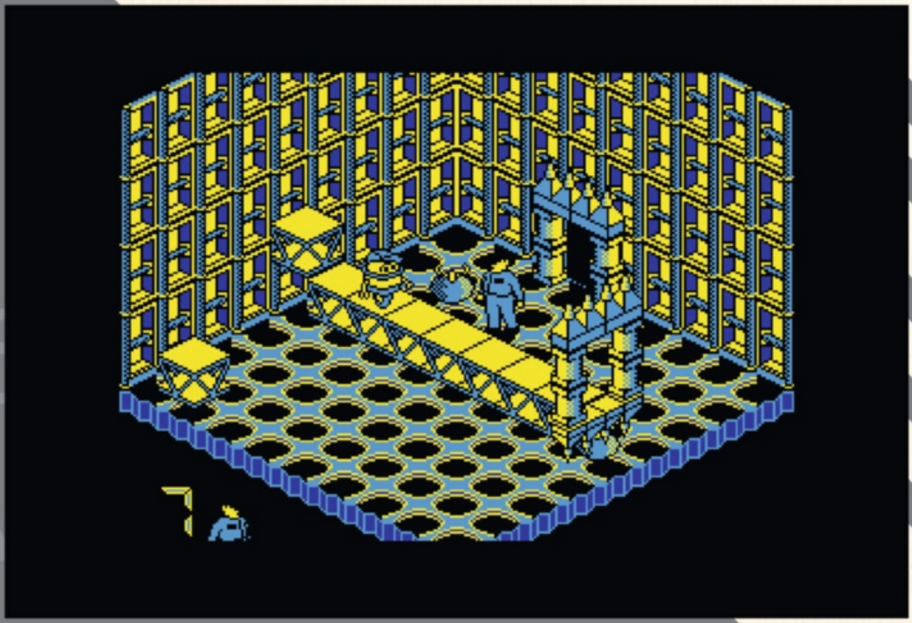
But despite these successes, all was clearly not well at Crystal with a division existing between the development team consisting mainly of Neil, Simon and Martin and the publishing and marketing arm controlled by Chris Clarke and Graham Stafford. Unsurprisingly, the latter two were keen to ensure that the Crystal brand remained at the forefront of all packaging and programs; the coders operated under a name that Simon had coined in the early Seventies. "I had been making amplifiers as a kid, and had this vague idea of setting up a design commune… I was very naïve," he laughs. "So I came up with this name, Design Design." The two names ensured there was a strange relationship between coders and publishers. "They didn't want our names to appear anywhere as they wanted the games to be Crystal products – which was fair enough. But Neil and I wanted to ensure they couldn't take us out of it, so we snuck ourselves into the code in various ways. But we actually quite liked them and it made sense to write games as that's what the market wanted."



» [Spectrum] *Return Of The Things* was a predictable follow up to *Halls*.



» Graham Stafford way back in the Eighties.



» [Amstrad] Post-Brattel Design Design capitalised on the popular isometric genre with the excellent *Nexor*.

TIMELINE

1970 IAN STAMP'S FORD ESCORT, WHICH WOULD OFTEN BE LADEN WITH ZX81S AND CASSETTES DURING ITS BRIEF TENURE AT CRYSTAL COMPUTING, IS BUILT AND ASSEMBLED, MOST LIKELY AT FORD'S HALEWOOD FACTORY.

1973 DESIGN DESIGN'S NAME IS BORN AS SIMON BRATTEL DREAMS OF CREATING A HIPPY-ISH DESIGN COMMUNE.

1982 CRYSTAL COMPUTING IS FORMED BY IAN STAMP AND CHRIS CLARKE. ITS FIRST GAME IS THE ZX81 STRATEGY TITLE, MERCHANT OF VENUS.

1983 CRYSTAL RELEASES HALLS OF THE THINGS, ITS MOST SUCCESSFUL GAME, IN ADDITION TO ROMMEL'S REVENGE, THE ISLAND AND COSMIC GUERILLA. AFTER THE 'NIGHT OF THE LONG KNIVES' CHRIS CLARKE DEPARTS CRYSTAL FOR ARTIC COMPUTING.

1984 CRYSTAL CONTINUES WITH GRAHAM STAFFORD AT THE HELM; INVASION OF THE BODY SNATCHAS! AND THE WARLOCK OF FIRETOP MOUNTAIN ARE ITS MOST NOTABLE RELEASES UNTIL THE CHANGE OF NAME MID-YEAR. DESIGN DESIGN IS BORN (OR RATHER REBORN) AND DARK STAR IS AN IMPRESSIVE FIRST RELEASE.

1985 GRAHAM STAFFORD'S 2112 AD AND ON THE RUN ARE THE STANDOUT RELEASES.

1986 NEIL MOTTERSHEAD AND LATTERLY SIMON BRATTEL BOTH LEAVE DESIGN DESIGN, TIRED OF THE CONSTANT PRESSURE OF DEADLINES AND RELEASE SCHEDULES.

1987 THE DESIGN DESIGN NAME LAPSES BACK TO SIMON BRATTEL. GRAHAM STAFFORD DEVISES THE WISTFUL NAME WALKING CIRCLES AS A REPLACEMENT.

2014 DESIGN DESIGN CONTINUES TODAY, RUN BY SIMON BRATTEL AND DOING WHAT IT WAS ORIGINALLY INTENDED TO DO: DESIGNING ELECTRONICS.

IN-JOKES AND RUDE JOKES

Crystal Computing and Design Design were famous for their crazy high score tables and jokes hidden within code. For example, typing the word 'sex' into the *Invasion Of The Body Snatchas!* high score table would reveal the predictable 'Yes please!'. Repeating the same word in *Warlock Of Firetop Mountain*'s score table a year later would result in 'Still waiting', a reference to coders' reputations when it came to women. Another ongoing gag referred to a mysterious woman called Lavinia, a name the boys came up with that referred to a woman named Sylvia who lived in the flat above Simon Brattel. "It was actually a pair of sisters who we used to dream about," says Simon. "I can still remember Sylvia lending me her copy of *More Joy Of Sex*, which was a horrible thing to do to a desperate virgin. Mind you, it wasn't as horrible as having her bloody bedroom right over mine and a bed that squeaked!"









The company began to gain momentum: Martin Horsley's excellent *Battlezone* clone, *Rommel's Revenge*, was a notable hit as was the Currah MicroSpeech-supporting text adventure, *The Island*. More importantly, a chance meeting within Manchester's Deansgate branch of Comet led to a publishing deal with Steve Jackson and Penguin Books. The initial game of this relationship would be a videogame version of the first of the famous *Final Fantasy* books.

"We had a meeting and all trooped down to London to see them," remembers Simon. "They had essentially seen *Halls* and wanted something similar only without the magical element. They also wanted a bigger maze, more varied enemies and, funnily enough, a warlock." Simon and Neil Mottershead set to work on increasing the size of *Halls*, despite the maze already being determined by the Spectrum's memory capacity. "*Halls* actually had the whole map stored in memory which made it easy to do things like moving monsters. It was limited because of the big map which took up 16K of memory, so we had a problem; the consequence was that *Firetop Mountain* was rather sparse." Ultimately the game's similarity to *Halls* earned it few friends in the press, despite it being almost exactly what Crystal's partners had requested. "That annoyed us because the code was completely different as we started from scratch," says Simon. "But we were under pressure and basically pushed the memory capacity to the limit to get this damned huge maze in."

> **"We essentially wrote it for fun, designing the game we ourselves would like to play"**
> SIMON BRATTEL ON HALLS OF THE THINGS

By late 1983, tension between the disparate parties reached breaking point. Everyone had graduated (or dropped out) from university and was living in a three-story house on Cheetham Hill, Manchester; literally on top of each other. The result is what Simon refers to as 'The Night of the Long Knives'. "It was essentially when Design Design took over Crystal," he notes, "because we were getting fed up with Chris trying to stamp his name over everything. It was all very childish, but Neil, Martin and I fell out with him, and it ended up with Chris leaving to join Artic." Graham Stafford, who remained, explains succinctly: "We had a 'disagreement'. Chris left and Crystal's sales doubled every month for the next five months."

Crystal Computing continued for a handful of months before another change was enforced upon the remaining members as the influence on the company's name finally took notice – and offence. "The Tatung Einstein was developed by Crystal Computers," recalls Graham, "and we got a 'cease and desist' letter telling us to change our name. Simon had been using the Design Design brand for ages so it seemed a logical choice as a replacement." Crystal Computing was dead; long live Design Design. "I was quite smart, even if I do say so myself," laughs Simon. "I said, 'okay, we need a name, I'll let you use Design Design but if I ever leave I'm taking the name with me because it's one I've used for

WHERE ARE THEY NOW?





Ian Stamp

Post-Crystal Ian worked at Ford for seven years before a spell in Madrid at a direct marketing agency. He returned to the UK and Ford as an IT contractor in the mid-Nineties and now works for a holiday cottage rental company – still in IT.

Graham Stafford

After Walking Circles closed, Graham spent seven years at Psygnosis producing games such as *Lemmings* and *Discworld*, before moving to Nokia in 1999. "Everyone thought I was mad," he chuckles, "games on phones? You've got to be kidding!" Today he works for an internet music company, specialising in new and emerging music. It has its own DAB Station (Amazing Radio) and is on the verge of branching into the United States.



Chris Clarke

After leaving Crystal, Chris joined up with his friend Charles Cecil at Artic Computing before helping Jon Ritman and Bernie Drummond create the iconic *Match Day* games. Chris's whereabouts are unknown, to **Retro Gamer** at least.

Simon Brattel

After leaving Design Design in 1986, Simon realised his dream, creating an electronic design company entitled KVM Systems. He still runs this company today, although its original name has long since reverted back to Simon. "Although I'd quite like to get back into writing games, maybe for Android," he mentions to us casually, "something to put that sense of humour back. Or, I think *Halls* would translate quite nicely…"

DEFINING GAMES



Halls Of The Things
By some distance Crystal Computing's finest hour, *Halls Of The Things* introduced Spectrum gamers to a huge maze and was crammed into the 48K computer with barely a byte to spare. Inspired by the early Nascom game *Keys Of Kraal*, Simon and Neil Mottershead came up with the idea of creating a real-time version with more enemies and objects. The player's task was to locate seven rings hidden in the maze and then the key, which opened the door out of the dungeon. An immense technical achievement for 1983.



Dark Star
Even though, like many Simon Brattel games, it began life as a mere demo (in this case a scrolling starfield), *Dark Star* had a galaxy of gameplay, in addition to its graphical attributes, with Simon keen to ensure the game moved at a fast pace. The graphics and shooting action were unprecedented on the Sinclair machine at the time and ensured Design Design's first release became a critical and commercial smash. By definition a simple game, the aim of *Dark Star* was to shoot, shoot and shoot with a bit of navigating in between.



Tank Busters
Simon Brattel had contributed just the name to Crystal's *Battlezone* clone, *Rommel's Revenge*, and despite admiration for Martin Horsley's Spectrum game thought the game was too slow to be a true classic. With a spare moment in his busy schedule, he began tinkering on an Amstrad version. The result was *Tank Busters*, a faster, smoother and, well, simply better version for the Amstrad machine, bolstered by Simon's drunken solution on how to make the tanks explode effectively. One of the finest 8-bit *Battlezone* clones.



Nosferatu
Having already cut its teeth with the science-fiction adventure *Nexor*, Graham was keen for Design Design to promote another isometric game, despite appreciating the need for a fresh angle. Based on the 1922 film, *Nosferatu* placed the player within an intricately designed 3D world, taking control of Jonathan Harker, Lucy Harker and Van Helsing as they attempted to destroy the titular neck-gnasher. Although the games market was swamped with similar titles, *Nosferatu* had enough variation and atmosphere to stand out.



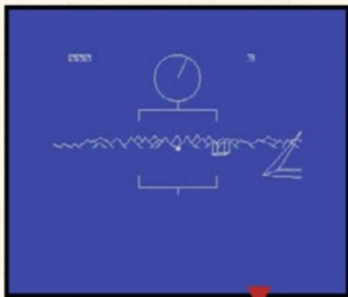
On The Run
It may have lacked the technical pizzazz of the majority of Design Design's Simon Brattel games, and also drew heavily on influences such as *Sabre Wulf*, yet *On The Run* was so fun to play it still managed to procure another *Crash* Smash. Playing Rick Swift, it was your job to infiltrate a huge maze and locate six flasks of a dangerous chemical, all the time fighting off the advances of the deadly local fauna. Despite its derivative nature, *On The Run* was a colourful and playable game infused with the de rigeur Design Design humour.

a long time.'" And with Clarke gone, Graham Stafford was de facto leader. "We let him think he was in charge, anyway," grins Simon, "but from my point of view I just wanted to play around with electronics, design hardware and write software for fun. Games were an inconvenience we had to do to pay for it all."

Design Design's first game, *Dark Star*, was one of its biggest hits and it had more than a shade of *Star Wars* about it – was the famous movie an influence? "Surprisingly no," says Graham, "and I know that's hard to believe. It was mainly Simon's desire to develop a really fast 3D game as opposed to something that updated at two frames per second. Simon agrees but thinks there might have been more to the *Star Wars* connection. "There *was* a *Star Wars* arcade machine at one of the motorway service stations on the M62 and we would head out that way in the middle of the night sometimes just to go and play the bloody thing!" *Dark Star* procured a *Crash* Smash, the reviewers particularly praising its "stunningly fast and smooth 3D vector graphics". But as Simon freely admits, it was more a triumph of technology than anything else. Not that *Crash* cared; the magazine had already formed a symbiotic relationship with Design Design, thanks in no small part to a shared mischievous sense of humour. "Graham (nose city) Stafford is suave and sophisticated" read a feature on the Manchester boys in issue 20, "Clean living, engaged, and up bright and early at 2pm every day, the epitome of the ideal programmer." *Dark Star* sold an estimated 30,000 copies in its first few months. "I was pleased that all the work demoing it to journalists over a period of months had paid off," says Graham, who had been busy himself converting *Halls Of The Things* to the C64. "And many a long journey in the company Astra was driven to that aim – although that was backed up by a great product." Design Design was up and running.

Next up for Simon was an Amstrad 'conversion' of Martin Horsley's *Rommel's Revenge*. Martin had moved on ("He got bored with games" says Graham) yet appreciative of his effort despite always bemoaning its lack of speed, Simon made it another technical tour de force, creating the pacey *Tank Busters* for the Amstrad. "The biggest problem with *Tank Busters* was when I needed to sort out some sort of explosion for when you shoot things," recalls Simon, "as in *Rommel's Revenge* they just disappeared. But I thought it would involve far too much processing." Then, one night, after several too many drinks at a local pub…"I was completely pissed having had seven or eight pints of Old Tom's or something," he laughs, "and I sat down in front of this game and thought 'I've got to do something about these explosions'. The next morning my machine was still turned on and when I hit the space bar to fire there it was: breaking up into fragments, spinning and bouncing, absolutely beautiful. Conclusive proof my subconscious is a lot smarter than I am!"

Despite these successes, Simon was beginning to tire of the constant stressful rotation of frantic coding and tight deadlines. "I wasn't a games player – I wrote them for amusement really," he explains, "and the later stuff was really written on a treadmill." One

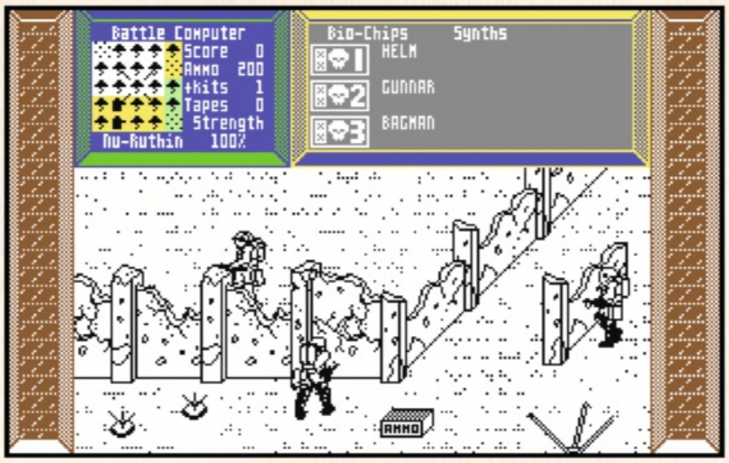


» [Spectrum] The impressive *Rommel's Revenge*, written by Martin Horsley.



» [Spectrum] The licence of *Nosferatu* was another superb isometric game.





such example was the follow up to *Dark Star* – *Forbidden Planet*. "We needed to do it commercially, but I'd had enough. Another 3D game? It was boring as hell and everything was hard. We tried to push the speed up but then you'd add things and it drove the speed back down. I was tired and fed up of writing games and I also thought to myself that 30-year-olds don't write games." Despite another round of excellent reviews for the sequel, Simon insists the game itself wasn't up to scratch, maybe caused by his ennui. "The force fields were very hard to do but this didn't translate into looking particularly good. I don't think the mechanics fundamentally paid off." Any criticism *Forbidden Planet* did receive centred on its similarity to *Dark Star*. "I don't remember that specifically," says Graham, "but sales were definitely less. But then follow-ups always are a challenge."

By the end of 1986, Design Design was operating without the man who had created its name. Simon permitted Graham and the remaining members to continue using Design Design for another year; 12 months later it became Walking Circles. The year proved an interesting one for the company with several high-profile releases, although the increasingly high investment required to publish games meant Design Design slowly became a development software house rather than a publisher. Graham Stafford in particular began to code more, producing a clutch of isometric games; *Nexor* was an intriguing original sci-fi game, while *Nosferatu* and *Rogue Trooper* (both published by Piranha) were interesting licences from 20th Century Fox and 2000 AD. Design Design's final game, released in 1987, was the product of a *Crash* competition entitled 'Genesis, Birth Of A Game' in which readers had been invited to submit their ideas for a game to the magazine, with Design Design charged with making it. There were actually two winners of the competition, with the plan for both games to be produced in quick succession. "Jonathan Eggleton's design document [for the game *Kat Trap*] was head and shoulders above everything else," notes Graham, "and we participated in the selection and had agreed to develop the games. We then worked closely with Jonathan to produce what he had visualised and I think he was pleased with the results." The second game, Martin Lee's *The Sewer*, never saw the light of day. "It got cancelled by mutual consent because it was proving a nightmare to code," says Graham.

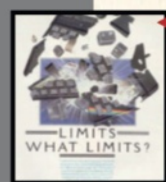
"Because most people don't bother to get too good, I knew I would succeed because you're up against people who basically can't be arsed," jokes Simon, looking back at this time coding in the Eighties. "I like designing computers and writing very efficient software, which I translated to making very good games. It was a great bunch of people and we got paid a lot for having fun, and I think that sense of fun and humour set us apart." Graham Stafford, involved in many more aspects, recalls: "It was damned hard work! Sleepless nights, days without sleep, driving hundreds of miles to deliver masters, and the gradual if predictable triumph of marketing budgets over development budgets. But in terms of influencing my career, it taught me it's good to be an innovator, break rules and the value of listening to the market, respecting it and at the same time influencing it. I pretty much loved every moment." *

Our thanks to Simon Brattel, Graham Stafford and Ian Stamp for their time and Paul Fogarty for providing images.

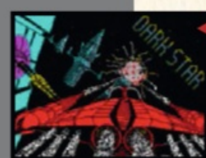
THE DNA OF… DESIGN DESIGN



Humour
From silly high score tables to *Spectacle* and amusing comments in game inlays, Crystal and Design Design always liked a laugh. Our favourite is hidden away in the code for *Invasion Of The Body Snatchas!*: "Stop looking in my program! I never wanted to be a programmer I always wanted to be a… (a) Sex Aid (b) Lumberjack (c) Hedgehog (d) Cheesecake (e) Father.



Pushing the Boundaries
While it wasn't the most ideal way of working – and certainly not how it's done today with games design itself a role within the industry – Design Design and, specifically, Simon Brattel's method of coming up with a technical idea first and then building a game around it certainly produced some great games.



The Need for Speed
Even many machine-coded games on the Spectrum lacked the excitement and speed to evoke that feeling of concepts such as futuristic space travel. Design Design made many sacrifices to push the speed up of its games (for instance, lack of sound), yet believed a fast-paced shooting game was what the punters wanted. They were right and *Dark Star* sold in droves.



Communal Spirit
Whether it was Chris Clarke and Ian Stamp forging their brief business relationship within Manchester University Halls, or a bunch of guys living together in a three-storey house on Cheetham Hill, there was always a crazy joke or drinking escapade just around the corner at Design Design.



Making A Spectacle
Simon Brattel couldn't resist having a dig at Sinclair and its claims of the colourful, amazing display of the ZX Spectrum, creating a teletext-style program for the flip side of *Dark Star* that poked fun at friends and foes alike.



Loving the Crash
If there was one relationship with the press that defined Design Design it was with *Crash*. From the Crystal days Simon and Graham featured heavily in the magazine and even contributed a diary as Design Design. Simon puts the relationship down to a shared anarchic sense of humour.



Design, Design and Designing
Unsurprisingly, given Simon's prior programming experience, the Crystal and Design Design games were all coded using the team's own homebrew computers. Cheaper, faster and better.



BIO

Prior lightgun games had simply required the player to be quicker and more accurate than the enemy, but *Time Crisis* included a foot pedal which allowed the player to dive in and out of cover to reload – an incredibly simple idea which added a new layer of depth to the genre. However, the entire game took place against the clock, adding pressure and ensuring that players couldn't be too methodical in their approach to blasting the bad guys. *Time Crisis* became a massive hit in 1995, ensuring the release of a PlayStation conversion as well as a series of sequels.

CLASSIC MOMENTS

Time Crisis

» **PLATFORM:** ARCADE » **DEVELOPER:** NAMCO » **RELEASED:** 1995

The arrival of powerful 3D boards in the Nineties allowed arcade game designers to exercise their cinematic skills, thanks to the range of camera angles that were now easily available. However, many games only employed these techniques sparingly in attract modes – after all, directing cinematic action means taking control from the player. *Time Crisis* was already on rails due to being a lightgun game, so there was no such restriction – and Namco made the most of it.

One of the best examples is a particularly exciting scene late in Stage Two. The player's character, Richard Miller, is running through a corridor. He catches sight of himself reflected in a mirror at the end of the corridor, but that's not all he sees – an enemy guard rounds the corner shortly after him and lets off a shot, narrowly missing Miller and shattering the mirror directly in front of him. Miller then swings around, allowing the player to shoot the enemy. The scene lasts only a few seconds, but leaves a permanent impression on players and spectators alike. ✱



MORE CLASSIC TIME CRISIS MOMENTS

Explosive arrival



Continuing the cinematic theme, Richard Miller's arrival in the first stage is full of action. Sliding down a zip line into the enemy base, the carnage escalates quickly – as enemy troops scramble to deal with the intruding secret agent, a submarine in the background explodes and begins to sink as red warning lights illuminate the area. You don't spend long in this first area, but it makes a huge impact.

Secret agent



Finding secrets in arcade games is always satisfying, just for those moments when you get to impress a spectator who hasn't yet seen them. Early in Stage Two of *Time Crisis* you'll come across some girders. If you shoot the wrap that's holding them together a few times, they'll fall and send all the enemies fleeing, saving yourself valuable seconds in the race to rescue the President's daughter.

Backpedal



Time Crisis doesn't just throw gun-toting bad guys at you – the entire environment can be called into action as a hazard. A battle amidst a group of parked cars quickly takes a turn for the worse for our hero as a car comes sliding around the corner and begins to drive straight towards him, requiring quick release of the pedal in order to avoid eating bumper.

Unfriendly dialogue



Part of the charm of *Time Crisis* is that the dialogue is hilariously bad. Lines like "How could you? You killed my boss!" wouldn't make the script of even the cheapest of cheap B-movies. The character who best combines hammy voice acting and risible writing is Sherudo Garo, the second stage boss, who decides that you need to be 'entertained' – so he slings throwing knives at you. Obviously…



In 1990 a small team of developers at a studio in Texas released the PC's first smooth scrolling platformer. Craig Ritchie talks to Tom Hall and John Romero about the DOS answer to Mario and Mega Man



IN THE KNOW

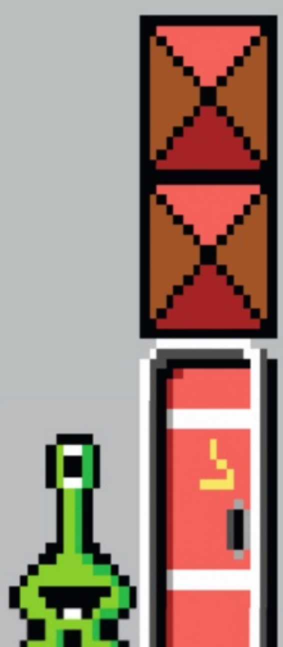
» **PUBLISHER:** ID SOFTWARE

» **DEVELOPER:** TOM HALL, JOHN ROMERO

» **RELEASED:** 1990

» **PLATFORM:** PC

» **GENRE:** SCROLLING PLATFORMER



Throughout the Eighties the PC gaming lineup comprised primarily of flick-screen adventure titles, tile-based RPGs and embarrassingly bad arcade ports. 1990, however, marked a significant rise in PC gaming performance with the likes of Origin's *Wing Commander* pushing hardware to the limits and LucasArts' *The Secret Of Monkey Island* taking the adventure genre to new heights. Yet in terms of certain graphical functions – side-scrolling in particular – the system was still trailing far behind what the dedicated hardware of the NES and Master System consoles had been offering for years. This changed when a then little-known team uncovered a graphics hardware trick that would have a colossal impact on the world of PC gaming – indeed, marking the first of many such innovations for a group whose later outings would include *Wolfenstein 3D, Doom* and *Quake*.

But let's rewind back to when a young Tom Hall encountered the machine that would set him on the path to his revolutionary brainchild, *Commander Keen*, a decade later. "The family had gotten an Apple II+ on 9 June 1980, when I was 15," recalls Tom, who is now VP creative and co-head of studio at casual game publisher PlayFirst. "I played with it all summer and then started making little games. I was making Super 8 films at the time, and my games were actually close to commercial quality, so I thought, 'hey, I can do this…'"

After a few years of programming and study Tom qualified with a BS degree in Computer Science from the University of Wisconsin-Madison. As part of his post-education job hunt, he visited IBM and Gould, now not entirely confident that he could actually make games for a living.

"The plant trips went well," Tom tells us, "but they all asked at the end of the interview, 'We like your resumé, we like you, but is this really what you want to do?' And I thought, 'nope, this is boring!' So I applied to a bunch of places… and got rejected."

Not deterred, Tom waited a few months before applying to another set of companies, and received one glowing offer letter from an operation named Softdisk based in Shreveport, Louisiana.

"It was kind of in games," says Tom, "in that it was monthly software collections or 'magazettes' – but it was a job! So my dad and I flew down, I got a crappy car and started to work. It was September 1987. I worked hard there for a year or so. It was great training. Horrible pay, but boy you learned to be quick. And how to make all sorts of things: games, utilities, apps and so on."

A fortuitous turn came when competitor operation Uptime folded, and Softdisk hired a number of their former employees – including one John Romero. Around the same time Softdisk also had a great submitter of content, a programmer called John Carmack. "I remember saying, 'Hey, we should hire that guy'," says Tom, "and later we did!"

Even though he was not working directly on the games, Tom became good friends with Carmack and Romero due to their shared passion for games and the common background of having cut their teeth on the Apple II – even though their professional lives had seen them move to the world of DOS.

"The reason we were on the PC," says Tom, "is when Romero was there, he knew a few systems but wanted to learn the new PC. So he did, and there was a push for a gaming disk per month. We had a naming session, and I came up with *Gamer's Edge* I believe. I had bonded with Romero and Carmack on Apple II love, and snuck in late at night to do levels or whatever I could, because that was the fun project. They later asked that I be put on their team as editor, because we worked so well, but Softdisk refused".

While he was working on his first games, Romero gave John Carmack a book written by Michael Abrash called *Power Graphics Programming*. "That book basically teaches



» [PC] Don't be fooled by that friendly face…



» [PC] The keycard mechanic seen in id's later games started here.

» [PC] The overworld map allowed for a non-linear approach to tackling the levels.



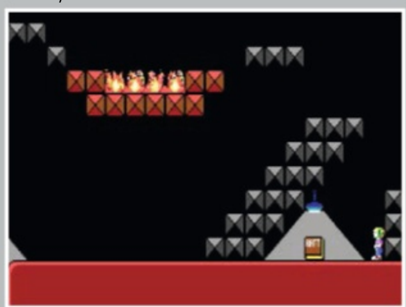


» Tom Hall, co-creator of *Commander Keen.*

» [PC] These screens were abundant in the PC gaming scene of the time.



» [PC] Philosophy books were strewn across the levels. But what were they a reference to?



» [PC] Let's not forget that earth's saviour is still just a little boy who loves his teddy.



everything about the graphics controllers in PCs back then," Romero explains, "So John started reading all the really hardcore parts of the book such as the CRTC address registers and the rotate registers – stuff that no-one normally would do. So he started to write an engine that used the CRTC controller… *immediately* he started going for the hardware!"

"I would even laughingly motivate him to do a specific hard thing," adds Tom, "by saying, 'Well, that's cool, if you don't think you can do it…' and then smirk and lift an eyebrow, then he'd go slam some amazing coding magic out. Personality-wise, he was like a super-nerdy friend – reading a 386 manual on a deck chair while we were in the pool in Shreveport! And the guy in *The Social Network* a bit."

John Carmack's programming talents and in-depth knowledge of PC hardware capabilities plus the shared vision of building bigger and better platformers was about to prove a powerful combination.

"We were fooling around after normal work," recalls Tom, "and Carmack had just got the *Dangerous Dave* engine working. One-frame Dave was bouncing around the screen over smooth-scrolling tiles – just a demo, but a demo of smooth scrolling, which hadn't been done on the PC before".

Make no mistake; side-scrolling platformers had appeared on the PC before, in varying levels of quality, but never this smooth. The best display of scrolling on the system before *Commander Keen* was arguably that of *The Adventures Of Captain Comic*, by Michael Denio, which also used the EGA hardware to simulate what consoles were pulling off so effortlessly. "*Captain Comic* came out in 1988," explains John, "years before *Commander Keen*, but what you must

COMMANDER KEEN HISTORY

The *Commander Keen* prototype *Dangerous Dave In Copyright Infringement* is still available to download from John Romero's site, planetromero.com. As primitive as it may appear today, this was a world first for PC gaming, and the evolution from its first incarnation into the finished product is clear.



"I had bonded with Romero and Carmack on Apple II love"
Tom Hall

10 MAGIC MOMENTS The key elements of Commander Keen

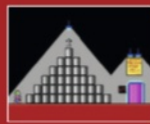
MISSING PARTS

■ A clear objective that added more than simply 'make it from start to exit', having multiple requirements to repair the ship also allowed for a rudimentary non-linear approach to completing the game's levels.



POGO STICK

■ An essential addition to the game that is now synonymous with the *Commander Keen* series, the connection to Scrooge McDuck's NES equipment is purely coincidental. We asked, you see.



PLENTY HAPPENING

■ It didn't take long before the screen was alive with multiple enemies, items and environment pieces, and PC gamers found themselves staring at something that rivalled what to date had only been seen on consoles.



MAP

■ The colour palette offered by the EGA card fitted the team's vision of a barren Mars landscape. It also allowed for backtracking and, as each level is completed, a sense of progression as well.



ICE START

■ Sliding on ice added a new dimension and an extra level of challenge. Sometimes just going pogo was the answer – after all, no one wants to lose control and end up in the jaws of a green alien beastie.





DEVELOPER HIGHLIGHTS

RAGE
SYSTEM: VARIOUS
YEAR: 2011

QUAKE
SYSTEM: VARIOUS
YEAR: 1996

DOOM (PICTURED)
SYSTEM: VARIOUS
YEAR: 1993

remember is that the screen scrolled eight pixels at a time. It didn't have smooth scrolling in it. I mean, it was a great game but the scrolling was nothing like on a NES because that was a hard thing to do. So with *Commander Keen*, we were like, 'this is what I'm talking about'! *Captain Comic* was the proto-*Mario* for the PCs back then, and *Keen* was like a refinement of that".

The solution was a hardware scrolling trick with the EGA's buffer that Carmack later dubbed 'adaptive tile refresh'. In brief, the technique involved using an off-screen area to store graphics that would then scroll onto the screen pixel by pixel rather than redrawing the entire screen from scratch each time the player moved. "It was great, of course," says Tom, "but that trick was the first inkling of something other people weren't doing. Up till that point, he was just a really great coder, one of our best submitters. But this was new. He showed it off to me, and I was all 'great!' Then I looked over at the NES in the corner, with the *Super Mario 3* demo on the screen. I smiled and said, 'What if we made the first level of *Super Mario 3… tonight*?' Carmack smiled and said, 'yeah!' and we were off."

Tom went through the level, pausing every few tiles to copy the graphics, drawing goombas and koopas as he went along. Once this was done, he built them into tiles using Romero's TED editor, sharing information with John Carmack. "He was making Dave collide with tiles," recalls Tom, "making him hit 'coin blocks', and I did a cover for the game, 'Dangerous Dave in… Copyright Infringement!' with a Nintendo judge about to send us to jail."

The duo finished the level at about 3:30 in the morning, copied it to a disk and left it on Romero's desk. "When we got in the next day, we were smiling, but Romero closed the door," says Tom, "He said, 'I've been playing this all day. We are *so* out of here.'"

Confident in the knowledge that they were onto something great, the team shared its demo with the higher-ups at Softdisk, one of whom – Jay Wilbur – even took it to Nintendo. Despite being impressed, Nintendo didn't bite. *Mario* was to stay on consoles, and the guys' efforts would go no further with the big N. Similarly, as much as it saw the potential of the engine, Softdisk likewise didn't share John and Tom's enthusiasm. With Hercules monochrome and CGA graphics still most prevalent, Softdisk management felt that because an EGA card was required, it precluded too large a proportion of its user base from playing.

Not only did management not want to pursue it, they went so far as to directly instruct the team not to work on it. Of course, the crew knew exactly what Carmack's technical discovery meant and would not be deterred by something as trivial as an edict from their employers. They kept working at night once their daily responsibilities were out the way, determined to forge ahead with a game they could release – separate from Softdisk if it came to that.

"We had to come up with an idea for *Commander Keen*," recalls John, "and John Carmack said 'how about a genius kid who saves the galaxy?' and Tom loved the idea and immediately went 'yes!' and started writing it up. That's exactly the kind of thing that he was into. Somehow Carmack said something that was exactly what Tom loved as a game designer, 100 per cent what he

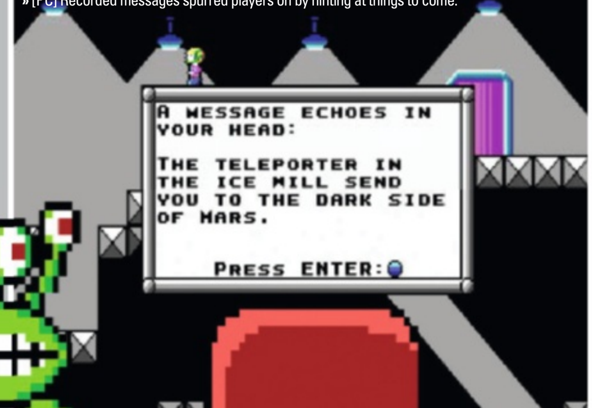
> **"I did a cover for the game, 'Dangerous Dave In… Copyright Infringement'"**
> Tom Hall

TOM HALL LOOKS BACK

"I pretty much love the way it turned out. The funny characters, crazy environments, the Standard Galactic Alphabet (that Notch asked to put in *Minecraft*, what an honour). There are a few levels that are too much retracing your steps, and some monsters that only got used on one level, but there's a lot of fun packed in there. Just wish I'd gotten to do *Keen* 7-9 to finish the trilogy of trilogies!"



» [PC] Recorded messages spurred players on by hinting at things to come.



HIDDEN CITY MESSAGE

■ This strange message post revealed *Commander Keen*'s one major Easter Egg, in the form of an entire hidden city area acting as a bonus level which could be accessed later on in the game.



END BOSS

■ The solution to beating the final Vorticon boss and claiming that essential Everclear fuel was to not attack him directly at all. Rather, think outside (or above?) the box and let gravity do the hard work…



INVENTORY

■ Getting closer to the end was marked by the inventory screen filling up – never more apparent than when only one item was left. And thank goodness that id decided to incorporate a save game feature too…



ENDING

■ Back home in bed like a good boy, our adventure wraps up with Billy's parents wishing him goodnight... but not without hinting at more to come. From the outset the id team had the shareware model dialled.



PREVIEWS

■ The preview screen likewise gave players a brief glance at what they could expect if they ponied up for the paid chapters, with improved backgrounds, new enemies, items and an overall more polished air.



loved. So we all melded really well with the first idea."

"The kid genius thing was part of what I came up with," explains Tom, "I said, 'I can come up with anything, sci-fi, fantasy. Anything you guys prefer?' I remember it clearly – Carmack said, 'How about a kid that saves the galaxy or something?' and I ran off and typed out the paragraph you see in the game: 'Commander Keen – Defender of Earth!' I came back in 15 minutes and read it to them in a Walter Winchell Forties news-announcer voice… and when I was done, Carmack applauded. This was it!"

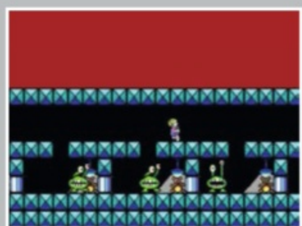
They improved their output thanks to the talents of artist Adrian Carmack (no relation) and were still without a publisher even though they were forging ahead with their design. This would change when Scott Miller, then head of shareware stalwart Apogee, contacted Romero because he was eager to see the team's work distributed using the shareware model. When he saw the *Super Mario 3* demo, he was convinced and sent them a $2,000 cheque to fund the game.

"For the next three months," says John, "Miller sent us $100 every weekend for pizza because we spent all our weekends working on this game. Even at Softdisk working on *Gamer's Edge* games, at seven o'clock we'd stop working on that, change directories and start to work on *Commander Keen*!"

The guys finished and published *Commander Keen* in December 1990, and it was immediately rewarded with the critical and commercial success the team had expected – and which Scott Miller had believed in. "In the first month the game made $22,000," continues John, "and we knew it was an amazing game – there was nothing on the PC like it. Sales just kept going up and up and up."

The game was the first chapter in a series that is now fondly remembered as marking a great leap in the early days of PC action titles, and despite the keyboard controls being of course clunkier than a console joypad, PC gamers at last had a platforming icon of their own. It still maintains a loyal fanbase that includes modders, fan filmmakers and even an appearance of the Standard Galactic Alphabet in *Minecraft*.

"It's been heartwarming over the years for so many fans to embrace *Keen*," says Tom, "It was the start of a lifetime of real independent game development. It let us 'quit our day jobs' and make just games full-time – the games we really wanted to make. That was – and still is – the dream." ✱



» [PC] The design of the final level brought some serious challenges for completionists.



» [PC] Sliding on the ice? Jump on that pogo stick!



» [PC] *Invasion Of The Vorticons* may not have had all the pizzazz of the later titles (this is the fifth game), but the lineage is clear.

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RONALD WAYNE

Dubbed the "unluckiest man in the world" having sold his shares in Apple for $800, Ronald G Wayne – an engineer who worked at Atari and one of three original founders of Apple – tells David Crookes that he doesn't regret a single thing

"HOPE YOU ARE WELL," **RETRO GAMER** TELLS RONALD WAYNE IN AN EMAIL EXCHANGE FOLLOWING OUR LENGTHY AND INSIGHTFUL INTERVIEW WITH HIM. "BE ASSURED THAT EVEN THOUGH I'M 79, I AM IN EXCELLENT HEALTH, WITH NO PHYSICAL AILMENTS OF ANY SIGNIFICANT KIND," HE REPLIES. AND HE'S STILL GOT ALL HIS OWN TEETH ("WELL, THE ROOTS ANYWAY").

WAYNE IS A REMARKABLE MAN. HE WROTE THE PARTNERSHIP AGREEMENT THAT LED TO HIMSELF, STEVE JOBS AND STEVE WOZNIAK FOUNDING APPLE. HE WROTE THE FIRST APPLE I MANUAL AND HE ALSO DESIGNED THE FIRST APPLE LOGO. WERE IT NOT FOR HIM, JOBS AND WOZNIAK MAY HAVE HAD A SERIOUS FALLING OUT AND APPLE MAY NEVER HAVE COME INTO BEING IN QUITE THE SAME WAY. BUT WAYNE WAS ALSO THERE IN THE FLEDGLING YEARS OF ATARI, EVEN WORKING ON THE ICONIC GAME, PONG. HIS IS A STORY WORTH TELLING...



» Ronald Wayne in his earlier days, taken when he worked at Atari.

You were born on 17 May 1934. What interested you as a child?
There wasn't a lot of money around when I was a child – World War II began shortly after I was born – but I had fun. I remember fondly playing with a small wooden wagon filled with painted wooden blocks at around the age of two. My father brought it home with him one night. I think he made it himself.

Was your father a big influence on you, then?
My mother discovered he was raising a second family in Elyria, Ohio in 1936 so he left us. When I was eight we moved to Superior in Cleveland. My mother took odd jobs through the Works Progress Administration and night courses in bookkeeping. She worked as a comptometer operator. It was a mechanical printing-adding machine used for office records.

Was it a tough childhood?
It was surreal. We had ration books and there wasn't a lot of money. But we did have fun too. If we're talking games, games in those days were cards. They were enjoyable.

When did you become involved with electronics?
I had to wait for the advent of integrated circuits in the Fifties. I'm one of these strange self-educated engineers. I grew up in the age of electron tubes and I taught myself electron tube electronics. When transistors came in I taught myself transistors. I did the same with integrated circuits.

What did you do when you left school?
I became a draftsman and then a designer, and then a junior engineer. I worked myself into engineering.

What kind of draftsman were you?
Mostly electronic products. My first big job was with a publications company where I did service manuals and operating manuals for the military. Since I drew up the schematics and everything, I would frequently take chunks of schematics home and build the circuits and see how they worked. Later on I went to work for a company called Kepco Power, which is still in business. They make power supplies. I did the chassis, closures, the wiring diagrams and schematics, and documentation.

Did your great interest in the engineering field lead you to Atari?
There was a position in product development and engineering at Atari. For the first time in my life I'd gone to a headhunter, which was quite a fascinating experience. That's when I came into contact with [Atari's co-founder] Nolan Bushnell.

What was your impression of Nolan?
He was quite a whimsical character and his chief engineer, a man by the name of Al Alcorn, was of a like nature. The company was very different from anything I'd ever experienced before. Among other things, they were game developers. There was a sense that if you went to work there as a janitor and you had an idea for a game they turned you loose in the shop and said go and build it.

What was your interview like?
Mr Alcorn interviewed me. When he walked in, he said 'Are you a spy for Bally [a major pinball manufacturer]?' It took me aback. I couldn't understand what he was saying or why he was saying it. I chuckled and he took that as a 'no', and that was it. He grinned and went off. I didn't find out until about a year later what that was all about. I was asked what I thought about the idea of Atari going into the pinball business, and I said very candidly, 'Look, you've got Gottlieb and Bally and all these companies out there that have been around for 50 years building pinball machines. The world really doesn't need another pinball manufacturer unless you're going to solve some of the several problems that exist in that industry.' I said I'd write a report and I spent the next couple of weeks putting it together. It came out about an inch thick and described some major areas in product manufacture in pinball that needed to be solved.

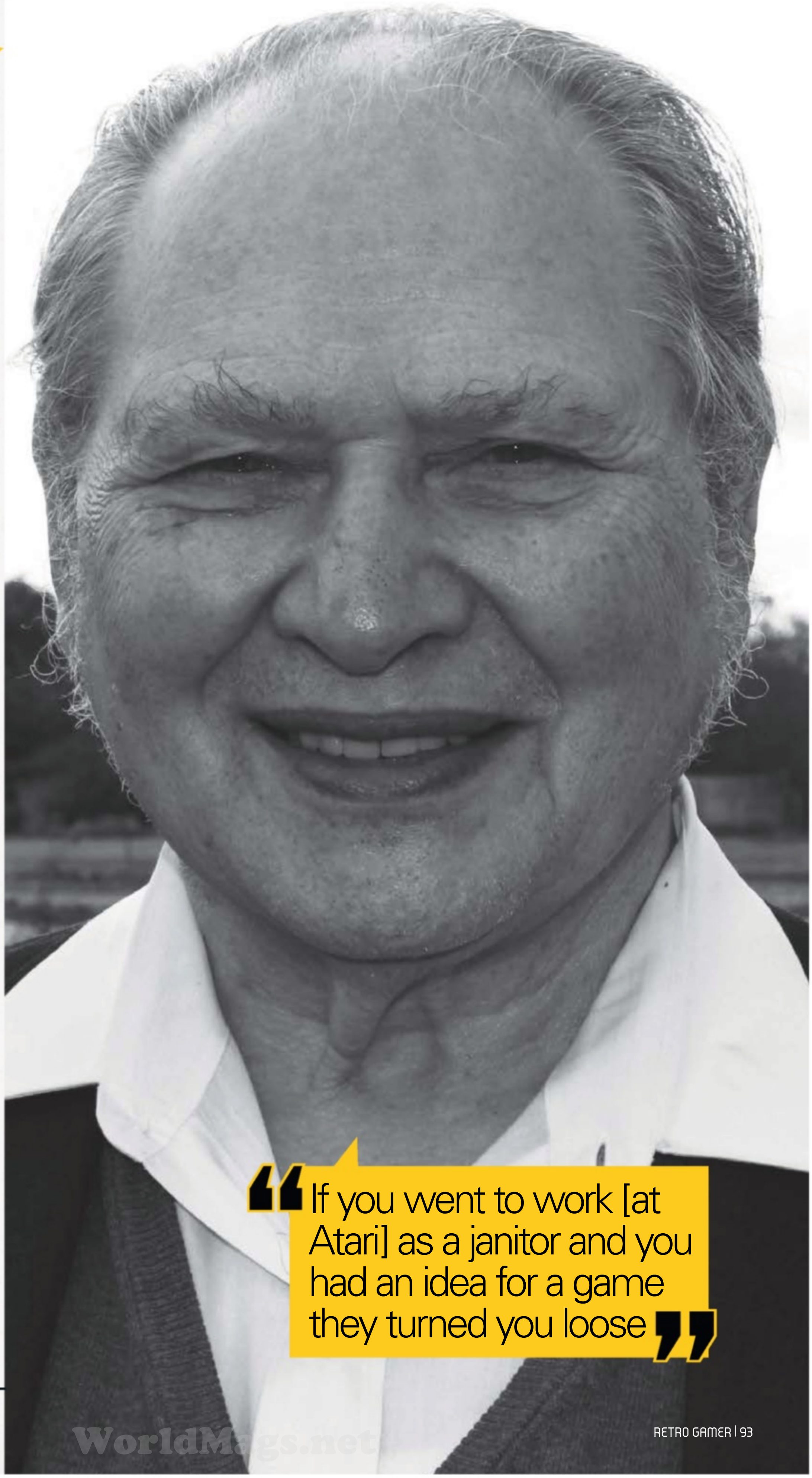
What were they?
One was cabinet construction. These pinball companies had been in the woodworking pinball cabinet business for 50 years. When these companies formed in the depression in the Thirties, labour was cheap. You could build a wooden cabinet for relatively little money. By the mid Seventies, cabinet building was a very expensive enterprise. My proposal was to use rotational moulded plastic. The next problem was the miles and miles of wiring in pinball machines. I recommended pinball-sized flexible printed circuits that would do the job for them. Anyway, I put this report together and I handed it to Nolan.

SELECTED TIMELINE

- **PONG** [ARCADE] 1972
- **DOCTOR PONG** [ARCADE] 1973
- **GOTCHA** [ARCADE] 1973
- **SPACE RACE** [ARCADE] 1973
- **PONG DOUBLES** [ARCADE] 1973
- **TOUCH ME** [ARCADE] 1974
- **PIN-PONG** [ARCADE] 1974
- **QUADRAPONG** [ARCADE] 1974
- **QWAK!** [ARCADE] 1974
- **REBOUND** [ARCADE] 1974
- **SUPER PONG** [ARCADE] 1974
- **TANK** [ARCADE] 1974
- **GRAN TRAK 10** [ARCADE] 1974
- **GRAN TRAK 20** [ARCADE] 1974
- **HI-WAY** [ARCADE] 1975
- **TANK II** [ARCADE] 1975
- **ANTI-AIRCRAFT** [ARCADE] 1975
- **CRASH 'N SCORE** [ARCADE] 1975
- **GOAL IV** [ARCADE] 1975
- **INDY 800** [ARCADE] 1975
- **JET FIGHTER** [ARCADE] 1975
- **STEEPLECHASE** [ARCADE] 1975
- **SHARK JAWS** [ARCADE] 1975
- **FLYBALL** [ARCADE] 1976
- **COPS N ROBBERS** [ARCADE] 1976
- **INDY 4** [ARCADE] 1976
- **LEMANS** [ARCADE] 1976
- **NIGHT DRIVER** [ARCADE] 1976
- **OUTLAW** [ARCADE] 1976
- **STARSHIP 1** [ARCADE] 1976
- **STUNT CYCLE** [ARCADE] 1976
- **TANK 8** [ARCADE] 1976
- **BREAKOUT** [ARCADE] 1976
- **CANNONBALL** [ARCADE] 1976
- **SPRINT 2** [ARCADE] 1976
- **SPRINT 4** [ARCADE] 1977
- **SPRINT 8** [ARCADE] 1977
- **CANYON BOMBER** [ARCADE] 1977
- **POOL SHARK** [ARCADE] 1977
- **TRIPLE HUNT** [ARCADE] 1977
- **DOMINOS** [ARCADE] 1977
- **DESTROYER** [ARCADE] 1977
- **SUBS** [ARCADE] 1977
- **SUPER BUG** [ARCADE] 1977
- **DRAG RACE** [ARCADE] 1977
- **BOXING** [ARCADE] 1977

What did Nolan say about it?

That was the last I heard for another year or so. Then I heard from another channel Atari had gone into the business about three or four months earlier. I said 'How come you're going into the pinball business and you haven't given me a shot at being a participant in that activity'. Nolan said, 'Well, the company decided they were going to put so much money into this that they didn't want to take any chances, so they went out and they hired a couple of pinball engineers.' One of them worked for Gottlieb, the other one worked for Bally. And I said 'Well, did you give them my report to highlight the technical areas that needed development?' He sheepishly told me he handed them the book and the engineer just wheeled around and dropped my book in the waste



> "If you went to work [at Atari] as a janitor and you had an idea for a game they turned you loose"

NUMBER CRUNCHING

0 number of Apple products Ronald has owned

12 number of patents Ronald holds

1973 the year Ronald started working for Atari

3.5 years spent at Atari

260 number of pages in his book Insolence Of Office that deal with economic and societal collapse

$22,000 Ronald's wage at Atari

1976 the year Ronald Wayne, Steve Wozniak and Steve Jobs co-founded Apple

$800 The value of the ten per cent stake in Apple that Ronald owned

12 the number of days Ronald kept his stock

$1,500 the extra sum of money that Ronald received in exchange for forfeiting any claims against Apple

2009 year he was interviewed for the TV documentary Welcome To Macintosh



» A photo taken in 1972 at the famous Golden Nugget Casino in downtown Las Vegas. The gentleman on the right is Hap Hancock, then slot manager for the casino. The person in the middle is John Hussar, the man who built the *Dice Machine* (shown being moved into the casino, for field testing). Wayne had been asked to build the machine's game logic.

basket and said 'Look, I don't need anybody to tell me how to design pinball machines.'

And did Atari produce a pinball machine?
They built the most spectacular pinball machine you could ever imagine. It had sounds, lights and motifs that I had never seen in a pinball machine before. The only problem was that there was a joker in the deck: these machines were one-and-a-half times larger in terms of floor space than any game that had ever been built and they were selling for almost twice what a normal pinball machine would sell for. The games were designed for the player instead of for the people who have to buy the machines. When you have a limited amount of floor space in an arcade and you're taking up that space with machines that are 50 per cent larger in floor space than any other machine and cost twice as much as any other machine, will those games bring in enough money to justify it? They wound up losing about a million dollars in the business.

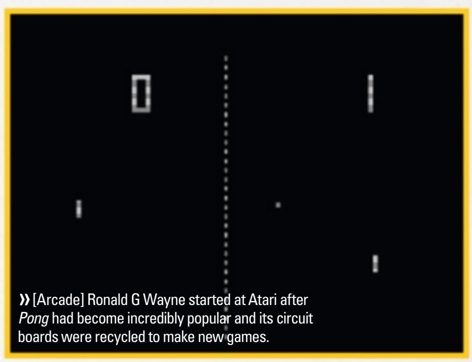
But there was a real level of freedom at Atari, wasn't there?
They built literally everything and anything. If it worked, fine. If it didn't, well that was okay – at least we tried. It was a very, very innovative company. They even had a facility in Grass Valley, California – which is way back in the pine-covered hills – where they had bought an old school building. They had their secret laboratory there where they developed all sorts of incredible games. When the development, or the basic concept at least, was virtually complete they'd turn it loose to the regular company and they would turn it into a product, or I would assist them in turning it into a product.

What was your main role at Atari?
I was hired as the chief draftsman and product development man. It was my job to engineer the cabinets, starting with various versions of *Pong*, which was their big start-up game. The company was only three and a half years old at that time, so it was still, as far as everybody was concerned, a new enterprise.

> "If you had a choice between Steve Jobs and an ice cube you'd nuzzle up to the ice cube for warmth"

What kind of work did you do on *Pong*? Did you have any influence on the game itself or was it very much the mechanical side of things?
I was on the packaging side and I did the enclosures. The whole experience undertaking that job was very different than anything I had previously. These start-up enterprises and innovators are focused entirely on the product they're trying to get out of the door and anything else is just an irritant, like setting up documentation systems, drawing systems. As far as they were concerned, a drawing system started with drawing number one and you go on from there. But by that time I'd been in the business for 20 to 25 years and I knew you couldn't build a documentation system that way. A documentation system is where you store all of the hundreds of thousands of bits of information that go to make up a game and it has to be stored efficiently or you're going to wind up losing that information. So the first thing I had to do was literally rebuild their drawing number system.

Was it very hands-on at Atari?
The first product I put together, I needed hardware latches so I went to the guys and I said 'Where is your purchased parts numbering system?'. They handed me this notebook with page after page of a long row of five digit numbers and, after each number, some rough description of a part that they had picked out had been scribbled in. If you couldn't find a part, well you went to the end of the list and took the next number, and then scribbled in your description. This was absolutely insane as far as trying to systematise purchased parts. So I said 'this is impossible'. They said 'Why don't you go to the stockroom and look among the bins and



» [Arcade] Ronald G Wayne started at Atari after *Pong* had become incredibly popular and its circuit boards were recycled to make new games.



FIVE TO PLAY

Five great games that Ronald had a hand in











BREAKOUT

■ *Breakout* was born from a desire by Nolan Bushnell to make, in effect, a single-player *Pong*. Instead of having two opponents with two bats, *Breakout* would have a single paddle that would be used to smash a ball against a wall of bricks, depleting the structure on each impact. Atari co-founder Al Alcorn handed the work to Steve Jobs who asked his friend, Steve Wozniak, to do the honours. The design was difficult to replicate, though, so Atari ended up designing its own for production.

GRAN TRAK 10

■ Released in 1974, *Gran Trak 10* was advertised as having come "from the *Pong* people". The coin-op was listed as a new videogame concept with big racing action and fantastic sound effects, but *Gran Turismo* it was not. But it did provide for some amazing fun. The dotted racetrack was viewed top-down and there were two pedals – one to accelerate and another to brake. With four gears – one to three and reverse – it was a race against the clock with obstacles such as oil slicks to hinder drivers.

QWAK!

■ *Qwak!* put the player in the shoes of a duck hunter and it came with a large rifle sticking out of the right-hand panel of the fairly rudimentary-looking coin-op cabinet. The game was released in 1974 and the aim was to use the rifle to shoot at the ducks that were flying around on the screen. Players were allowed three shots per duck, after which the duck 'won' and another would fly out. When a duck was blasted from the sky, a dog would run towards it and gather it up.

GOTCHA

■ Advertised in only the way a Seventies game could be – by a straight-laced looking guy clutching a mini-skirted girl – *Gotcha* was billed as "an amazing maze of fun". Groan. It looked futuristic with its plastic panelling and two joysticks. Players would assume the roles of the pursuer and the pursued, haring around the maze as a square and a plus sign in a bid to catch and avoid capture. A beep would increase in intensity when the two players got close, cranking up the tension.

WORLD CUP FOOTBALL

■ With up to four players able to compete in a soccer tournament, *World Cup Football* was released in 1974. There were two cabinets for the game. One was upright and the other was a tabletop, but the visuals and play remained the same. Steve Jobs penned a report to his former supervisor Stephen Bristow in 1974 on how the game could be improved to make it much more fun. The memo went under the hammer in 2012 and it sold for a cool $27,500.

you'll find the parts you're looking for. The parts have a number on. Use that number.' I went out there and rummaged through their inventory and I knew immediately I had to go in and see Mr Alcorn because we had a serious problem.

What did he say?
It was with considerable apprehension that I went into Mr Alcorn's office. I felt like I was going to have my head handed to me so I told him flat out. I said 'Look, you've got a half million dollars of inventory in there that might just as well be in concrete. You're never going to get this stuff out of there. You've got six parts with the same number and six numbers for the same part. We've got to do something about this.' He told me, 'No we don't. You have to. You're the chief draftsman, go ahead and do it.' I was the new kid on the block being told to tear up the old system and build a new one and this was something I'd never heard before in my experience. So I spent the next six months putting together a complete documentation system [where] the numbers were meaningful numbers. It gives you a clue as to the sort of enterprise that it was.

When you saw *Pong*, were you amazed? It really gripped people's imagination, didn't it?
It was extremely popular, and at first they couldn't keep pace with the demand. They were building these circuit boards at a tremendous rate but the interest began to taper off because new games were beginning to come out. All of a sudden they're up to their armpits in circuit boards and products that they're not finding a home for. So they started to come up with various applications for the *Pong* circuit. Some of the games went into bars and lounges. They built these little tables with the *Pong* game in it and people would sit around on the bar and do whatever, and they would play *Pong*. There were so many different applications. We tried everything possible to use up this enormous inventory of *Pong* boards. That was in addition to the new product development that was coming.


» [Arcade] Military style games such as *Anti-Aircraft* were a staple Atari output and they were popular around the US and Europe.

What did you do after *Pong*'s release?
After *Pong* we did *Gran Trak 10*, which was the driving game. You had the single *Gran Trak* where the player had a steering wheel and gas and brake pedals, and he would drive this vehicle on the screen around the track and the track had various obstacles on it – oil slicks and so on. He was trying to beat the clock to get his car round the track without crashing it. Then there was a two-player *Gran Trak 20* where two drivers competed against each other and the screen had two cars on it.

They were very popular games, weren't they?
Yes. This was such a popular game they expanded it to a four-player game where the screen was faced upwards. Around the four sides the four drivers competed with different coloured cars, racing each other around the track. They even went so far as to try an eight-player game and that's where it got interesting because when they first put the thing together one of the engineers came into my office. The power supply was on a circuit board and he was holding it up by the leads like a dead rat. The circuit traces had been blown off the board and he wanted to know what the problem was. I looked at the board and I knew immediately what had happened. When they built the four-player game, they stuck the same power supply as they used for one and two-player in there but it was supplying four times as much current as the original one. By the time they tried an eight-player game they blew the traces off the circuit board because the circuit board hadn't been designed for that. I did artwork for a brand new circuit board

YOU ASK THE QUESTIONS



Retro Gamer readers put Ronald to the test, the inquisitive buggers…

RORY MILNE: Did you have much contact with the larger than life designer of the 6502 chip and the Commodore PET Chuck Peddle in the very early Apple days?

Other than Steve Jobs and Steve Wozniak, I had no contact with any of those who were, or would eventually be, the giants of that industry.

MERMAN: Were you at those early computer club meetings when the first Apple was shown?

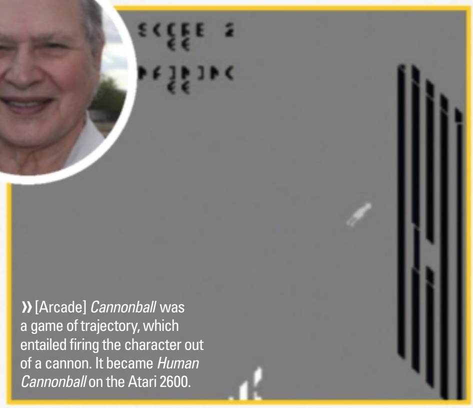
The simple answer is, no. I actually did not have any direct involvement with computer development. In fact, following the habits and practices of a lifetime, during my employment at Atari I was then taking advantage of my employment exposure to the technology to expand my acquired understanding of electronics, to then include TTL and CMOS logic design.

MERMAN: Did you see a future where computers would be in every home and business, or indeed small enough to be carried everywhere?

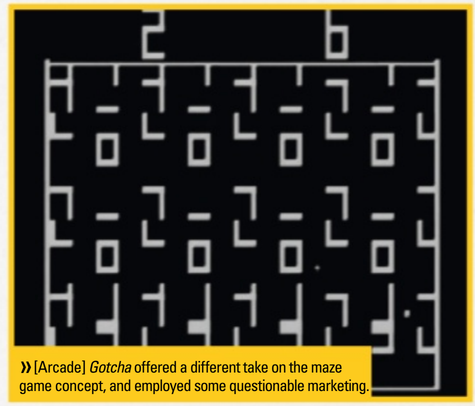
At the time of my involvement with Jobs and Woz, there was no question in my mind that Apple would be a profound success, and it was obvious even to the casual observer that personal computers would literally invade the world. But I've always been a person (right or wrong) who followed his passions – and my own passion at that time was for slot machines.

MERMAN: What was the biggest difference in the company culture at Apple and Atari?

It's difficult for me to answer that question, since I never worked at Apple. But, from the outside looking in, I would suggest that there was really no great difference. What I mean by that is that both companies drew heavily on the concept of allowing free-reign to the imagination of the people who worked there.



» [Arcade] *Cannonball* was a game of trajectory, which entailed firing the character out of a cannon. It became *Human Cannonball* on the Atari 2600.



» [Arcade] *Gotcha* offered a different take on the maze game concept, and employed some questionable marketing.

with traces that would be heavy enough to carry the current.

So what would be the main concerns when you were putting together a cabinet like that?
Serviceability and cost of course, but transportation was a big problem. Some of these had to be designed so they could be quickly assembled in bits and pieces that could be shipped domestically (overseas they did their own cabinets). Some of these games were so big that it was very difficult to package and ship them, so I had to break them down into segmented pieces and provide an assembly manual to tell people how to put the things together.

What sort of cabinets were they?
The games were fascinating ones, things like *World Cup* and *Qwak!* which was a duck shooting game where you had a light beam rifle, and your ducks on the screen coming at you ready to be shot at. And then of course we had all of the military games we put together in addition to *Pong*.

You spent some time in Europe too, didn't you?
Atari made me international field service engineer and I spent several months in Europe, including about six weeks in Britain visiting people who were aspiring to be distributors of Atari products. My job was to make sure they had facilities where they could service the circuit boards and so on. If I qualified them then they could go ahead and buy the product, and they became the distributor for that town or segment of city.

What was the experience like exporting Atari games to a European market?
It was a wonderful time. I had a ball. In England, for instance, I was dealing with a company that had been the first to receive an Atari product. Their very first approach to breaking into the European market was to ship the complete game, the whole box, cabinet, everything. And the guy told me the first game came in this huge crate, and they peeled the door off the crate and they were faced with this enormous *Pong* game, and of course right across the top in huge letters is the word 'Pong'. They thought it was a kind of joke, a play on fart.

Were you very much taken by the games industry at that time?
Very much so. Working in Europe wasn't always easy – I could manage English but no other language but I was able to travel around with a linguist, Monsieur Guillard.

Was it a culture shock to be working in Europe?
When I got to Italy, we noticed they had a terrible coin shortage there [in the Seventies, demand was outstripping the small coinage minted by the Italian government]. We met Monsieur Bertolino who was the main Italian distributor and he was using these special tokens that were being struck. He'd go to a place and he'd buy these tokens to play the games. If you had tokens left over you sold them back, and some of these were gaming machines where you got back more. I qualified him virtually immediately.

Cause for celebration?
Sure. He said 'Right, we'll go out to lunch. Now that we're qualified we'll have a big celebratory lunch.' So we went to this restaurant back in the hills some place. It was about 150 years old. I think the staff were the same age. We're sitting around the table and Bertolino was discussing the military games he wanted: at least six Battleships and ten Anti-Aircraft, and at least 12 Tanks. We said the Tanks were committed to Belgrade. Then I looked around the room while this rather loud conversation was on and began to worry we were going to get arrested. We soon changed the subject.

Steve Jobs worked with you at Atari as well, didn't he?
Yes. He was a consulting engineer. He did not work for Atari. He worked on projects.

Which projects did Jobs work on?
One particular project he worked on was when they were up to their armpits in *Pong* circuit boards. They had sold refurbished or second-hand boards to a company in Europe, which was having a hell of a time getting them to work. Nolan had to get somebody out there who knew what he was doing. Steve Jobs was the best IT technician in the world at that time so Nolan got Jobs and said 'Look, I want you to go out to the shops in Europe and take care of servicing these boards.' He said, 'I'll send you first class, the whole nine yards, but get these circuit boards serviced.' Jobs said, 'I'll do that, but instead of the round-trip air fare, give me the one-way air fare and the difference in cash, and after I'm done I'm going to go off and do my own thing.' His own thing was a trip he made to India to see a ritual that was taking place in the Himalayas.

And did Steve Jobs do a good job in Europe?
Once he got there, I started getting phone calls from Europe complementing us on this wonderful job that Steve Jobs was doing. These boards were coming

> **"Wozniak is a fun guy, the most whimsical character I've met in my life"**

out of there like popcorn and they were ecstatic. In a matter of three weeks, Jobs had gone through these stacks of boards and got them all cleaned up and working. That was the sort of thing Jobs did. He and Steve Wozniak got together and came up with a game called *Breakout*. Well it was Wozniak who designed it and Jobs who offered it to Atari.

Did you get on with Wozniak?
Oh yes, Wozniak is a fun guy, the most whimsical character I've met in my life, and the most gracious man. The last time I had seen Wozniak was when Jobs took me to a convention in San Francisco for a convention in 2000 that was being held where they were offering their new Macintosh. They set me up as a VIP to be an audience member, as he went through his spiel. After that experience, Jobs took me off to the Apple facilities where we went to the cafeteria and had lunch. Steve Wozniak showed up and we sat around the table and had a very casual conversation for a couple of hours. That was the last I saw of Wozniak until about three years ago when I was invited to attend a Macworld convention. He charged across the room, greeting me like a long-lost brother and we had this wonderful conversation that went on for a couple of hours. I was really quite astonished, but this was the sort of guy he was.

And what about Jobs?
If you had a choice between Steve Jobs and an ice cube you'd nuzzle up to the ice cube for warmth. He was extremely focused, even back in the days when he and Woz didn't have two nickels to rub together. He had an idea wherever it was he wanted to go and the last place you wanted to be was between him and it because you'd wind up with footprints on your forehead.

Can you recall when Wozniak came up with the first Apple computer?
Yes, Woz did it because it was a lot of fun, and Jobs saw it as the basis of a business and off they went. I got introduced to Woz because Jobs and Woz had a minor disagreement. Wozniak, as skilled as he was in the world of circuit design and product development, had very little concept of business, and Jobs was having this problem with Woz because Woz was very parental about the circuits he had developed. Wozniak wanted the right to use these circuits in other applications, and Jobs said he couldn't do that. This would be proprietary to whatever company was set up. He was having a hell of a time trying to get Woz to understand this because, as skilled and forceful as Jobs was, he wasn't much of a diplomat. So finally he came to me and said he was having this problem with Wozniak. Would I explain to him?

How did you eventually approach the subject with Steve Wozniak?
I was in my 40s, these kids were in their 20s. And Jobs knew that I had had a corporation of my own at one point before I learned that I had no business being in business. I was a better engineer than I was a businessman. Nonetheless, I had this background that made me the grown-up in the room, and he asked me to explain to Wozniak what the situation was and get him to understand. So I said 'Fine, bring him over to the apartment and we'll sit around in the evening and we'll chat about it, and I'll get him to understand.' It took about an hour's conversation but Woz is a reasonable guy. All that had to be done was to lay it out reasonably before him and he got the message. And it was at that point in time that Jobs said 'We're going to form a company, that's it.' He and Woz would have 45 per cent and I would get ten per cent as the tiebreaker in case of any future disputes. Jobs felt I was going to be a reasonable guy and bring reason to the equation, and sort the thing out. That's where Apple began.

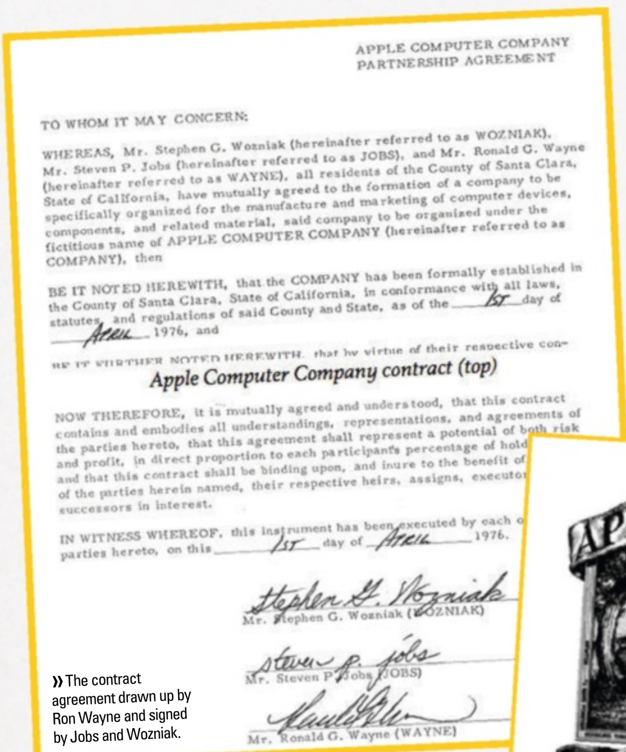


» [iOS] Arcade classics continue to be profitable for Atari

But then you pulled out of founding Apple. Why was that?
Their skills were far beyond what I had. I felt if I had gone into business with them that I would be very much the number three, spending years shuffling papers in a back office so I pulled out and went back to Atari. Actually, you might have heard of what happened to my original Apple contract. About 20 years ago, I'd sold that document which I'd personally typed up on the eve that Jobs, Woz and myself agreed to the founding to an autograph dealer for $500. Then, about 18 months ago, that same document actually sold at auction for $1.3 million. And yet, while I missed that particular boat, I'm still amazed that a product of my own hands actually became so coveted that someone would be willing to pay more than a million dollars for it. Weird.

Do you have any career regrets at all?
None at all. When I left Atari, I went to work at a military electronics company for 16 years and I retired in 1999. I had a great career and met some very interesting people. It was fun being at a turning point in history and I was very fortunate to have been there. I will probably wind up going down as a footnote in history because I happen to have known someone, but it was fun.

Ronald G Wayne's book, *Adventures Of An Apple Founder*, is available in paperback and in digital form via Kindle and iBooks.


APPLE COMPUTER COMPANY
PARTNERSHIP AGREEMENT

TO WHOM IT MAY CONCERN:

WHEREAS, Mr. Stephen G. Wozniak (hereinafter referred to as WOZNIAK), Mr. Steven P. Jobs (hereinafter referred to as JOBS), and Mr. Ronald G. Wayne (hereinafter referred to as WAYNE), all residents of the County of Santa Clara, State of California, have mutually agreed to the formation of a company to be specifically organized for the manufacture and marketing of computer devices, components, and related material, said company to be organized under the fictitious name of APPLE COMPUTER COMPANY (hereinafter referred to as COMPANY), then

BE IT NOTED HEREWITH, that the COMPANY has been formally established in the County of Santa Clara, State of California, in conformance with all laws, statutes, and regulations of said County and State, as of the 1st day of April 1976, and

BE IT FURTHER NOTED HEREWITH, that by virtue of their respective con-

Apple Computer Company contract (top)

NOW THEREFORE, it is mutually agreed and understood, that this contract contains and embodies all understandings, representations, and agreements of the parties hereto, that this agreement shall represent a potential of both risk and profit, in direct proportion to each participant's percentage of hold... and that this contract shall be binding upon, and inure to the benefit of... of the parties herein named, their respective heirs, assigns, executor... successors in interest.

IN WITNESS WHEREOF, this instrument has been executed by each o... parties hereto, on this 1st day of April 1976.

Mr. Stephen G. Wozniak (WOZNIAK)
Mr. Steven P. Jobs (JOBS)
Mr. Ronald G. Wayne (WAYNE)

» The contract agreement drawn up by Ron Wayne and signed by Jobs and Wozniak.





RETROREVIVAL

Chuckie Egg

GETTING THE MOST OUT OF THE EDUCATION SYSTEM



» BBC Micro
» A&F Software
» 1983

Nigel Alderton's classic platformer started off life on the Spectrum but I've always associated it with the BBC Micro. Back at school we'd regularly use the computer for technology classes, getting to grips with graphs or *Granny's Garden* if our teacher was in a really good mood.

We also had a computer club that was designed to teach us rudimentary BASIC, giving us an insight into the exciting world of home computing. Being the eager student that I was, this after-school time wasn't a doorway into bedroom coding, but a simple excuse to play as many new games (our teacher, Mr Holland, liked to keep up to date with the latest trends) as possible. It was here that I first came into contact with Nigel Alderton's insanely energetic platform game.

Coding class soon became a 'beat the high score on *Chuckie Egg*' class and I soon started to get really good at it. So good in fact that when I visited a friend's house I was only too keen to show off my 'skills' as we liked to say back then.

The keyboard was my weapon of choice, and Tim Foster wouldn't stand a chance. Or so I thought. No matter how many hours I had clocked up while I should have been studying, I couldn't compete with someone who actually owned the game. Tim taught me an important lesson that day and in future I kept my 'skills' to myself. Unless of course I was really bloody good at the game in question… *



RETRORATED



>> Sony's underrated PS Vita gets to shine this month with two awesome games in the form of TxK and OlliOlli. We also look at the sequel to Castlevania: Lords Of Shadow

TxK

TWITCH GAMING PERFECTION SOME 30 YEARS IN THE MAKING

INFORMATION

» **FEATURED SYSTEM:** PS VITA

» **ALSO AVAILABLE ON:** N/A

» **RELEASED:** OUT NOW

» **PRICE:** £39.99

» **PUBLISHER:** LLAMASOFT

» **DEVELOPER:** IN-HOUSE

» **PLAYERS:** 1

BRIEF HISTORY

» Jeff Minter has been creating games since 1981, initially creating and selling titles on the ZX80. He soon moved over to more powerful 8-bit computers, developing an affinity for the shoot-'em-up genre, something he still has a deep love for. He formed Llamasoft in 1982 and remains one of Britain's most entertaining developers.



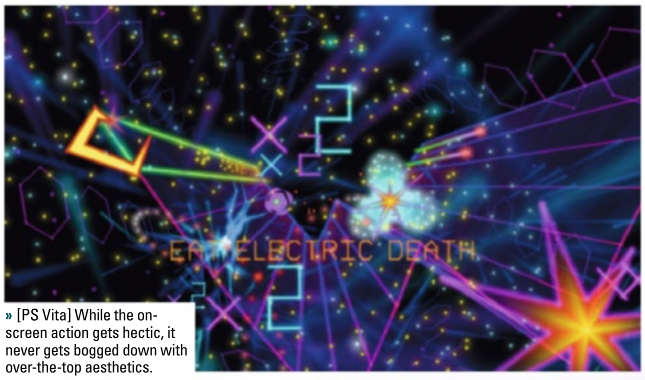
It's rather fitting that our current issue has an arcade theme, because that's where Jeff Minter's latest shooter truly belongs. Yes it can be argued that it's yet another retooling of Dave Theurer's classic shooter *Tempest*, but when you consider the success Minter has had with his own versions of the classic arcade game you can hardly blame him for returning to it. It's like *Tempest* is a digital itch, one that the bearded auteur can't help scratching every few generations of hardware. It's possible though that Minter's methodical fine-tuning of Theurer's iconic game can be finally put to rest, because it's hard to imagine how the developer is ever going to top this magnificent little shooter.

Minter hasn't always had the best success over the last decade, with his games seemingly at odds with the markets they were aimed at. The polarising (yet oh so brilliant) *Space Giraffe* seemed largely misunderstood by gamers when it first turned up on Xbox Live Arcade, while delightful iOS efforts like *GoatUp 2*, *Caverns Of Minos* and *Super Ox Wars* were lost in an overly-saturated market. Minter and Vita feel like a match made in heaven though. Sony's handheld is slowly gaining the interest it deserves thanks to the release of the PS4, a selection of high profile indie games and the fact that people are beginning to realise that the system *does* have great games on it. It's Minter's chance to shine and he's taken the bull by the horns and delivered a wonderfully hypnotic game filled with incredible eye-searing visuals and a trance-fuelled soundtrack.

TxK feels extremely similar to *Tempest 2000* and *Space Giraffe*, in so much that you move along the edges of weird geometric tunnels shooting enemies as they continually crawl towards you. You'll score points the further away they are, so you'll want to move as quickly as possible. Luckily your craft is amazingly



» [PS Vita] Let off the SuperTapper and you'll destroy all on-screen enemies, scoring double points for each one.



» [PS Vita] While the on-screen action gets hectic, it never gets bogged down with over-the-top aesthetics.



✱ PICKS OF THE MONTH



DARRAN

TxK

It looks amazing, sounds amazing and plays amazing(ly) well. The twitch shooter that every Vita owner needs.



NICK

OlliOlli

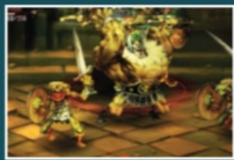
It's a 2D *Tony Hawk's*. What else do you need to know? It's insanely addictive and will constantly drag you back.



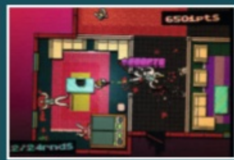
More Vita games with a retro flavour



Spelunky
It's as tough as the toughest pair of old boots, but it matters not. *Spelunky* on Vita is amazing, capturing all the brilliance of the home ports, while integrating the excellent 'Daily Challenge' mode from the Steam outing. Hard, but addictive.



Dragon's Crown
Scrolling fighters don't really get made any more, so snap this beauty up and support the genre. The anatomy of the women will earn sniggers from some, but beneath all the exposed flesh is a wonderfully deep fighter.



Hotline Miami
Dennaton's lurid, luminescent masterpiece offers excellent mechanics and a brutal challenge, all set against an electric pink Eighties backdrop. The Vita port is superb and effortlessly adapts the mouse and keyboard controls of the PC.



Jet Set Radio
Sega's classic Dreamcast game feels like a perfect fit for Sony's handheld. The fast pace of the gameplay makes it perfect for pick-up-and-play action, while the cel-shaded visuals look glorious on. Why the sequel's not made it we'll never know.



MotorStorm RC
It may be a launch title, but we still return to this entertaining top-down racer again and again. There's plenty of variety in the track design, while the cars all control brilliantly. Best of all it's also available for Cross-Buy with the PlayStation 3 version.



Superfrog HD
You don't get more retro than a remake of an old Amiga game. Team 17's popular platformer receives a charming update that's only let down by the sheer pace of *Superfrog*, which makes it difficult to avoid incoming objects on the Vita's screen.

fluid, able to skirt around the tunnel's edges at a lightning fast pace. This is handy, as power-ups typically appear at the most awkward moments, meaning you're constantly weaving your way around the psychedelic levels trying to find the quickest and safest route.

Power-ups routinely appear, offering everything from extra lives to Warp Triangles and a useful AI drone that follows you around, occasionally saving you from enemies that get too close. As with *Tempest 2000* and *Space Giraffe*, *TxK* features a jump power-up, enabling you to leap off the tunnel's surface for a few brief seconds, hopefully giving you the required time to take down those incoming enemies. Complete a level and you'll have a small mini-game where you tilt the Vita to keep a soul-spark in the centre of a warp tunnel for maximum points. Other power-ups reward you with a Warp Triangle. Collect four and you'll be transported to a bonus stage where you either hit incoming rings or follow a constantly moving pathway.

Eventually a rogue enemy will catch you out and your craft will be either sucked down the tube or blown into pieces by a

WHY NOT TRY

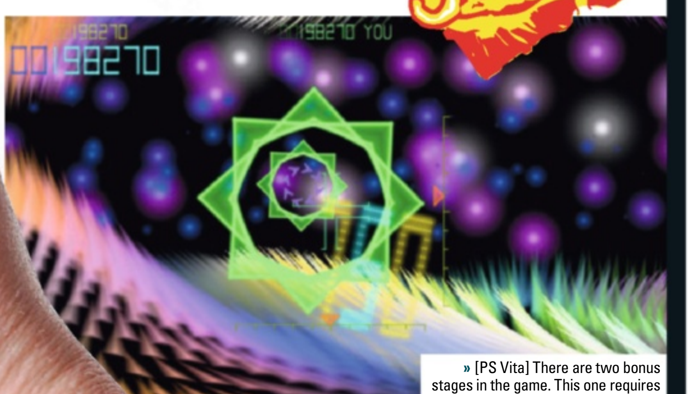
▼ SOMETHING OLD
TEMPEST 2000 (JAGUAR)



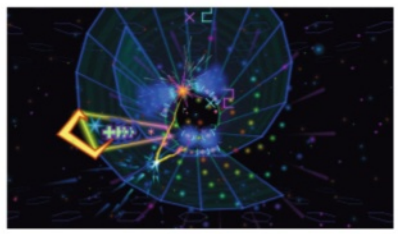
▼ SOMETHING NEW
SPACE GIRAFFE (XBOX 360)



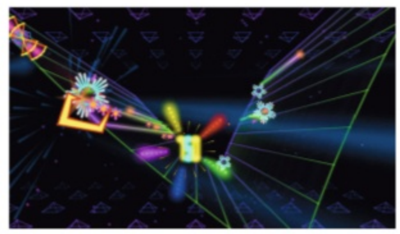
retro GAMER SIZZLER



» [PS Vita] There are two bonus stages in the game. This one requires you to constantly fly through rings.



» [PS Vita] Stages start off fairly easy to navigate, but soon turn into geometric death traps.



» [PS Vita] As with past *Tempest* games you need to avoid the green stalks when you head to the next stage.

> **"Minter has greatly toned down his typical trademarks, making everything far easier on the eyes"**

stray bullet. You can save being dragged into the digital abyss by touching the Vita's screen and discharging the SuperTapper, a powerful smart bomb that clears all on-screen enemies. As with past *Tempest* outings the bomb does get re-powered at the beginning of each new level, but as the geometric tunnels become ever more elaborate, you'll find yourself using them far too soon.

It's never to the game's detriment though, as *TxK* is an incredibly balanced blaster, easily eclipsing both *Space Giraffe* and *Tempest 2000* in this respect. Minter has greatly toned down his typical trademarks, making everything far easier on the eyes and a lot more accessible to newcomers. There's still plenty of silly stuff to be found and it's unmistakably a Minter game, but the wackiness takes a backseat to the excellent gameplay and never overwhelms you. You'll occasionally get hit by the odd hard-to-see bullet, but the audio cues used do make them much easier to avoid. Sonically it's superb too, with the blistering soundtrack perfectly complementing *TxK*'s stunning visuals.

There's plenty to sink your teeth into from a gameplay point of view as well, with three separate modes to enjoy. Pure Mode begins whenever you start a new game, while Classic Mode lets you immediately play from your furthest reached level. A nice touch here is that the game will automatically keep note of your best ever lives and score, making progress much easier. Last but no means least is the brutal Survival Mode that expects you to finish all 100 levels with just three lives.

It's taken him over 30 years, but Minter has finally created not only his greatest game, but arguably one of the best examples of the genre – an amazing fusion of sound, sight and gameplay. *

In a nutshell
This is twitch gaming at its finest. Well-paced gameplay, a deliciously silky difficulty curve and astonishing aesthetics all combine to create Minter's finest hour.

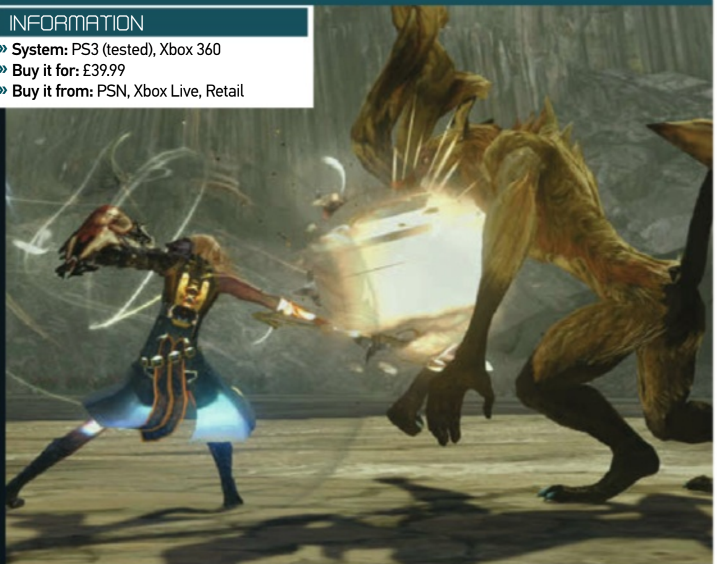
>> **Score 96%**

RETROROUND-UP

>> Every month we look at all the classics and latest releases that are available to buy or download

DOWNLOAD OF THE MONTH

INFORMATION
» **System:** PS3 (tested), Xbox 360
» **Buy it for:** £39.99
» **Buy it from:** PSN, Xbox Live, Retail



Lightning Returns: Final Fantasy XIII

When considering audience expectations for a *Final Fantasy* game, a gripping plot is usually right at the top of the list. *Lightning Returns* has an interesting premise – the game takes place in the final days before the end of the world, and Lightning must save as many souls as possible. However, between the baffling plot and flat characterisation inherited from its predecessors in the *Final Fantasy XIII* trilogy and the flat voice acting and dull exposition of its own, *Lightning Returns* never delivers on this front.

Thankfully, Square Enix has been inventive with the game's mechanics. The open-world design allows you freedom to decide how to achieve Lightning's task and the revamped battle system takes place in real-time, bringing the series close to action-RPG territory. Thanks to the extensive customisation options each of Lightning's costumes can fulfil different combat roles such as magic use and defence, and swiftly switching between them is crucial to success. You'll never care why you're saving the world's inhabitants – a cardinal sin for the *Final Fantasy* series – but doing so proves reasonably enjoyable regardless.

68%

Castlevania: Lords Of Shadow 2

» **System:** Xbox 360 (tested), PS3, PC » **Buy it for:** £34.99 » **Buy it from:** Xbox Live, PSN, Steam, Retail

Everyone's favourite family of vampire hunters is back at it again in MercurySteam's *Castlevania* swansong, *Lords Of Shadow 2*. Following on from the quite brilliant first instalment, Gabriel Belmont is now Dracula, a particularly famous vampire that you may have heard of.

The hack-and-slash gameplay available in the first game is still readily available here, and the inclusion of a controllable camera has augmented the action nicely. Combat itself is great, if a little basic at times, and there are a variety of memorable boss fights throughout the game.

There are, however, some truly annoying stealth sections that have been shoehorned in by some misguided individual at some point. In addition to this there are some slightly ill-advised segues into platforming territory that also detract from the main focal point of the game; its combat. The story is nothing to write home about either. Slightly disappointing, but still a solid action game and worthy of a few hours' attention.

72%



>> OTHER HIGHLIGHTS



OlliOlli

» **System:** PS Vita
» **Buy it for:** £7.99
» **Buy it from:** PSN

You don't need to enjoy skateboarding to appreciate the addictive qualities of *OlliOlli*. Effectively a cross between an endless runner and a *Tony Hawk's* game, the aim is to negotiate 2D landscapes while completing a number of tasks that range from achieving a set number of points during combos to pulling off specific tricks. The difficulty curve feels off on certain stages, but this is an otherwise challenging score attack game and another Vita gem.

88%



Thief

» **System:** PC (tested), Xbox One, PS4, PS3, Xbox 360
» **Buy it for:** £39.99
» **Buy it from:** Steam, Xbox Live, PSN, Retail

This reboot of the classic stealth franchise purveys some decent mechanics at times, but ultimately falls below the mark that we'd expected. Although Eidos Montreal has gone to great lengths to create something that feels forward thinking, instead we are left with a fairly by the numbers first-person experience peddling some dodgy AI. It's not a terrible game, but it certainly isn't what we had hoped for.

60%



Pac-Man Museum

» **System:** Xbox 360 (tested), PS3, PC
» **Buy it for:** £15.99
» **Buy it from:** XBLA, PSN, Steam

This compilation contains nine games, of which the highlight is *Pac-Man Battle Royale*, a recent arcade game making its console debut. It's an excellent multiplayer game, but one which would have benefited greatly from online play. The lack of display options is unfortunate – every game except *Pac-Man CE* is bordered, often not nearly filling the screen. Meanwhile, *Ms Pac-Man* just shouldn't be paid DLC at this premium price point.

55%



R-Type II

» **System:** Android (tested), iOS
» **Buy it for:** £1.49
» **Buy it from:** Google Play, App Store

R-Type II is a great arcade shoot-'em-up, and DotEmu's mobile treatment does it justice. The game contains a great variety of options, including auto-fire and stage selection. Finding a control method to suit your preferences should be no issue, too – you can even customise the size and position of on-screen buttons. If you're fast with a touchscreen, you might find that the touch control method does break the balance.

87%



It was nice to see an actual NES game entered into the NES Jam last December, these retro-themed competitions like the Speccy Jam might not be expecting people to enter games written for the hardware but I'd love to see this happen more often. Thinking about it a little more, perhaps there's room in the market for some kind of Retro Jam where 8- and 16-bit developers could take part?







» [Spectrum] Well, well, well.



» [Spectrum] Have at thee!

LAND OF MIRE MARE

DON'T GO WALKING SLOW ON YOUR OWN

FORMAT: ZX SPECTRUM
DEVELOPER: LUCA BORDONI
LINK: KIKSTART.EU/MIRE-MARE-SPEC
RELEASE: 2014
PRICE: FREE

Enter the long-lost and mystical Land of Mire Mare, where an ancient curse threatens to destroy everything by forcing three volcanoes to erupt. These powerful curses require something equally potent to cancel them, so long-term adventurer Sabreman must locate three magic jewels and dump them into the Mire Mare well, break the spell and prevent the area being engulfed in lava. These shiny trinkets can't just be picked up because that would be too easy, so a spot of *Indiana Jones*-style swapping of them for a 'pledge' is required, and these items can be pretty much anything found lying around from a mystical moonstone to an old boot.

Sabreman must also either avoid or deal with energy-sapping enemies roaming the screens as well and there are also weapons to collect which work on ranges of enemies – energy is represented by a gauge labelled as "water" on the status bar, so getting a drink will top up the levels for his current life. The only nasties completely immune to Sabreman regardless of weapon are the guardians, which prowl around the screens where the jewels can be found, so these need to be avoided. There are also doors between sections of the map as well and, although there are keys to find, they're only good for one pass and disappear from the inventory so an alternative will be required to complete the mission… something like the axe perhaps.

Quite a few readers will be aware that the inspiration for this game, Ultimate's *Mire Mare*, was unreleased with the name appearing as a teaser on the completion screens of other Sabreman adventures. That means there's not much in the way of useful information on what the game was meant to look like, and this is developer Luca Bordoni's take on what it could have been, mostly based on the previous games in the series. Some of the graphics were created by Jarrod Bentley – partially based on the mock-ups of *Mire Mare* he created previously for a **Retro Gamer** article – and the Celtic-sounding title music comes courtesy of beeper musician Mister Beep.

Land Of Mire Mare does have a lot to live up to; the Sabreman titles are held in high regard by fans so trying to produce a new instalment will always stand a chance of being ripped to shreds. Fortunately it holds together pretty well and is also a demonstration of what can be achieved with Jonathan Cauldwell's *Arcade Game Designer* with some patience and experimentation. In fact the only complaint we have about *Land Of Mire Mare* is that the game was over too quickly and, after a game or two to acclimatise to the controls and learn the layout, we found that it was possible to romp through the jewel collecting process in under ten minutes.

85%

> "The only nasties completely immune to Sabreman regardless of weapon are the guardians"



NEW GAMES NEEDED

If you have a homebrew project you would like to see featured then please contact us at:
retrogamer@imagine-publishing.co.uk

LA GUERRA DE GAMBER

» **FORMAT:** AMSTRAD CPC » **DEVELOPER:** ESP SOFT » **DOWNLOAD:** KIKSTART.EU/GAMBER-CPC » **PRICE:** FREE

Economic collapse has led to a rise in crime, orchestrated by anonymous figures controlling vicious gangs. The streets are no longer safe and people live in fear, so enter former soldier JT Gambler who, despite an unremarkable military record, could be the man for the job. Helpfully, he already has a gun. The crime-ridden locations are presented as horizontally scrolling areas sometimes with ladders going up or down between levels. Gambler must make his way through each stage to take down the street punks before tackling one of the crime lords – when the boss is defeated there's a first-person shoot out as a bonus stage too.

La Guerra De Gamber is solid and pretty playable, although there are some very tricky moments in it that are guaranteed to get people screaming at their monitor. Most players will need to put in a lot of trial and error learning of the stages to really enjoy it.

70%



» [Amstrad CPC] Lie down on the floor.



» [Atari 8-bit] The key to another way.

PERPLEXITY

» **FORMAT:** ATARI 8-BIT » **DEVELOPER:** FANDAL
» **DOWNLOAD:** KIKSTART.EU/PERPLEXITY-A8 » **PRICE:** FREE

Developed back in 1989 for the BBC Micro by Ian Collinson and converted to the Atari 8-bit by Frantisek 'Fandal' Houra, *Perplexity* might look like a clone of *Pacmania* but it is actually a puzzle game. In each maze is a quota of stars to collect rocks, which must be cleared by shoving them together and keys that need to be pushed into locks. There are monsters in the maze as well, but they only patrol fixed routes rather than actively chasing the Pac person.

The levels are all quite long with even the first stage taking around five minutes to complete, and only being able to push objects means that there are several ways to get them irretrievably stuck against walls so, although there's a time limit, it's best to pause and plan ahead before moving something. Having a mini-map next to the play area really helps and the game dishes out a password for each level when the previous one is completed.

77%





POOYAN

» **FORMAT:** COMMODORE VIC-20 » **DEVELOPER:** ADRIAN FOX
» **DOWNLOAD:** KIKSTART.EU/POOYAN-VIC » **PRICE:** FREE

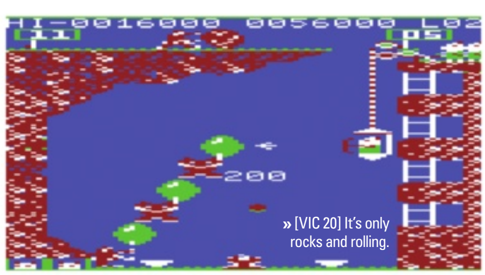
Poor Mama Pig's little piglets were out frolicking in the woods when some big bad wolves with thoughts of bacon on their minds came along and grabbed a couple! But Mama has a particular set of skills and, with the aid of a bow, some arrows, her remaining offspring who provide a pig-powered elevator and slabs of meat which can be used as weapons, she takes on the wolves as they drift in on helium balloons to steal more of her babies before heading to their den to retrieve her stolen children. Missing a few wolves isn't immediately fatal but Mama can't safely let too many through.

This is a reasonably close conversion of Konami's *Pooyan* and the VIC-20 handles the action surprisingly well. Taking down the wolves is tricky but entertaining and we found those occasional, well-timed shots with the slab of meat that knock four out of the sky to be incredibly satisfying!

80%



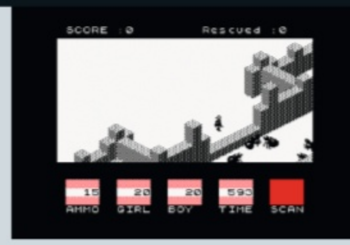
» [VIC 20] One hundred and eighty!



» [VIC 20] It's only rocks and rolling.

WHAT'S BREWING?

All the latest news from the homebrew community



» [Amstrad CPC] Got any sugar?

>> Not a picnic

Last issue we mentioned a ZX81 port of Sandy White's *Ant Attack* and now there's another one available for the Amstrad CPC. The program is actually an emulator of sorts so getting it going will initially take a bit of work and a specific Spectrum version of the game. A 128K CPC is required to run the emulator and there's more information and downloads over at CPCWiki's forums behind Kikstart.eu/ant-attack-cpc.



» [Amiga] Running and gunning.

>> My best enemy

Enemy 2 – Missing In Action is a new flick-screen action game for any Amiga with 1Mb of RAM which is the sequel to developer Andre Wuthrich's 1997 release *Enemy – Tempest Of Violence* which was originally a commercial release but is now available as a free download from the Anachronia website. Since the story continues in the sequel, the developer recommends playing the original game first. Kikstart.eu/enemy-2-amiga



» [Spectrum] Round one… load!

>> Loads Of Rubbish

And finally, there's the latest instalment of the Comp.Sys.Sinclair Crap Games Competition, an annual event where members of the Spectrum community compete to produce the worst game, with the person responsible for the best entry given the job of hosting the next iteration. Myke-P's *Super UDG Fighterz 2 Turbo* was top of a 102 entry pile in 2013, so his shiny new website can be found hidden behind Kikstart.eu/csscgc-2014-spec.

HOMEBREW

>> The scene's latest news and reviews

WHAT'S BREWING?

All the latest news from the homebrew community

>> STRAWBERRY

The first NES Jam competition was held during December 2013 for games that looked like they were running on a NES. Unlike the two similar competitions we've mentioned where developers aped the Game Boy and Spectrum, something that stood out with this particular competition is that one of the entries, a sadly incomplete platformer called *Tiger Jenny*, was written to run on the real machine rather than aimed at a modern platform. Kikstart.eu/nes-jam pops over to the NES Jam forums where entries were announced and available for download.



>> RASPBERRY

The first Global Game Jam was held between the 24th and 26th of January 2014 with events taking place under that banner in a whopping 488 locations around the planet. The output was a staggering 4,292 entries for a range of platforms, including some physical games and quite a lot of experimental gameplay ideas. Kikstart.eu/global-jam goes to the official website.



FLASH BOREDOM

Want to know how to while away those boring office hours? Then don't miss out on **Retro Gamer**'s Flash game of the month. This month we take a look at **Road Rush**

THERE'S NO MESSING AROUND WITH ROAD RUSH AND NO COMPLEX BACK-STORIES. JUST DRIVE YOUR CAR AS IF YOUR LIFE DEPENDED ON IT, GRAB THE HUGE COINS TO PURCHASE NITRO BOOSTS AND REPAIR KITS BETWEEN STAGES AND SMASH INTO A QUOTA OF MARKED ENEMY VEHICLES TO COMPLETE EACH LEVEL. KIKSTART.EU/ROAD-RUSH-FLASH

MORE GAMES WE'VE BEEN PLAYING...



PROJECT ADVENTURE – THE CYCLE OF THE CAVE

» **DOWNLOAD:** KIKSTART.EU/PROJECT-ADV-WIN

***Project Adventure** – The Cycle Of The Cave* doesn't have much in the way of a storyline but, judging by what little there is, the game itself and the not entirely subtle pastiche of the *Indiana Jones* theme on the titles page, the player is taking control of a brave if foolhardy explorer as he tries to escape an uncharted island, search for unimaginable wealth and possibly find redemption. The classic cave-based platforming elements make an appearance so expect spike pits, collapsing platforms, bats swooping from the rafters or deadly plants springing from the ground. Weapons and skills required to handle specific areas will also be found along the way, as will boss encounters and traps.

It's very tough going and possibly approaching the *Rick Dangerous* end of the difficulty scale – we had to point specifically at the plant traps that are barely noticeable in their pre-triggered state or those irritating bats which are seemingly positioned to cause the greatest possible trouble – so it probably isn't going to be suitable for less hardy adventurers, but players who enjoy a substantial run-and-jump challenge similar to *You Have To Win The Game* should find it to their liking.

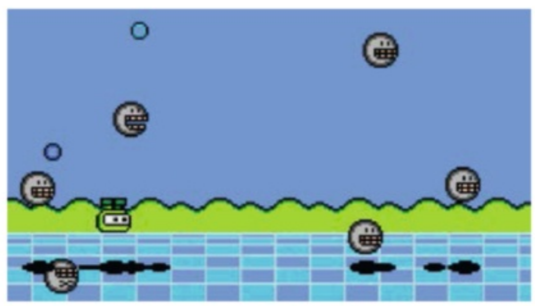
PERMUTATION RACER

» **DOWNLOAD:** KIKSTART.EU/PERMUTATION-WIN

Permutation Racer **is** a high-speed dash across an alien-looking world trying to reach the next checkpoint before time runs out. There are crystals to collect on the way past that will charge the boost feature and the player's speeder can jump to avoid obstacles that will get in its way; players will still need to concentrate though, otherwise they're likely to find themselves stuck or plummeting off the narrow causeway.

There are no opponents to worry about and not many frills either, but we found it to have a reasonable amount of longevity simply because we were presented with a completely new set of stages every time a race began. The link we've given also has both Windows and Mac versions available to download.





THE ASSAULT OF SPACE MUTANTS FROM ARCTIC RAINFORESTS

» **DOWNLOAD:** KIKSTART.EU/TAOSMFAR-WIN

The Evil Lord Of Evil Evilness has awoken and, despite the fluffy, friendly-sounding name, his only impulse is to destroy the Earth with his army of space monsters. The rather splendid Sir Bernald Blackbourne has bravely taken to the skies with his jet pack to give this menace a stout, stiff upper-lipped kicking.

The Assault Of Space Mutants From Arctic Rainforests was one of the entries into the recent NES Jam mentioned in What's Brewing this issue, so the graphics are very NES-like and the sounds suitably bleepy. The action is enjoyably simple – just move horizontally, thrust against gravity and fire bullets or bombs at anything that looks nasty – and as the levels progress there'll be a lot of quite cute enemies to blast.

HOMEBREW HEROES

IT ISN'T OFTEN WE FIND ATARI 2600 GAMES WITH AN ENTIRE TEAM BEHIND THEM, BUT CGE ADVENTURES HAS QUITE A FEW PEOPLE BEHIND IT. WE SPOKE TO THE RETRO GAMING ROUNDUP TEAM THAT WAS THE DRIVING FORCE BEHIND THE GAME



Q&A

The most obvious question is where did the idea for *CGE Adventures* originate from?

We were in our booth at Classic Gaming Expo in Las Vegas and interviewing a classic gaming author when a character who had been acting strangely all weekend made off with a stack of our audio CDs that we use for promo.

It turns out that the guy is actually deaf, and while all theft is morally wrong, stealing something of no use to you is just stupid. We filed a police report and looked for him but we posted pictures and our listeners quickly identified him.

We made a comment that it would make a great game and one of our listeners, Todd Holcombe (Byte Knight) said that he would like to make it.

Todd was just finishing a homebrew sequel to *Adventure* for the 2600 called *Evil Magician Returns II*, so he already had *Adventure* stuck in his head, and once he heard the story unfold he felt that it would make a great maze game.

And how long did it take to get the game itself working?

We took about a year from inception to shipment. Todd did the game logic with some technical help from RevEng and Illya, and the programming and bug-fixing took about eight months of free time. PacManRed and RetroShaun made the sprites and the title screen which all turned out excellent.

Were there any features you wanted that couldn't be included?

Despite using a modern modified *Pitfall II* engine (DPC+), there were still some limitations. We only had a limited number of on-screen sprites available, so UK Mike and Intellivision-the-Great share the same sprite memory and never appear on screen at the same time. We were limited to 4Kb of graphics memory, so the backgrounds had to be low resolution and blocky. There was enough memory to include one Easter Egg so the naked SoCal Mike playing Liberace's piano will have to wait for the sequel.

And we understand there'll be board and card games based on *CGE Adventures* as well?

Indeed, among other things. The British IBM wrote a theme song for us which works really well as it is reminiscent of something used for a chase scene in *Scooby Doo*. The board game is for two to four players and is currently being play-tested. It is largely the work of James Eastham (RF Warrior), a previously published game author.

We also have a card game based on *Chase The Ace* that is freely downloadable from our site so people can print their own version. We may have some of these professionally made as an add-in for the board game.

Can we expect another Atari game from Retro Gaming Roundup in the future?

During one of our beer-fuelled Live News segments it was pointed out that Dizzy, a delicate egg, as a playable character was absurd, so we proposed Marvin Milk, a character that can assume different forms at will – powdered milk to float on air, cheese to deflect blows, evaporated milk to escape enemies and so on.



» [Atari 2600] Turnin' night into daytime.



» [Atari 2600] On a CD hunt.



» [Atari 2600] The prototype *CGE Adventures* board game!



» [Atari 2600] A worryingly tidy coding environment!

MAILBAG

HAVE YOUR SAY… SEND US A LETTER OR MAKE YOURSELF HEARD ON THE ONLINE FORUM – **WWW.RETROGAMER.NET**

WIN! Every month, one lucky writer-in will receive a copy of our latest eMag, **Retro Gamer Load 3**, a bargain if ever there was one





» [Amiga] We're big fans of the imagination on display in this screenshot – adventure novels indeed.

QUEST COMPLETE

Dear **Retro Gamer,**
About six years ago I emailed your letters page trying to recall an old Amiga text adventure game. Well, I finally remembered it this weekend, and it's *Dungeon Quest*! The name popped into my head in a dream (no, really). After watching a YouTube video, it turns out I was two rooms away from completing the game. Not throwing a sack at a dragon was my downfall.

In other news I hope all is good with you – I think I last emailed when I had just finished up on *Fable II*, so you may not recognise this email address! I'm at Media Molecule these days, having just finished up on *Tearaway*. Anyway, all the best,
Jon Eckersley

We're pleased to hear that you found the game you were trying to remember for so long! Having said that, we can only imagine the frustration of discovering how close you were to beating it. It's something that we'd imagine younger gamers have never had to worry about – between YouTube and wikis, the days of worrying about whether or not you'd ever see the end of a game are over. Oh, and keep up the good work – you've been involved in some excellent games! The day when Retro Gamer covers *Fable II* as anything other than a Future Classic is a long way off, but with releases like that under your belt we'll no doubt be calling for you when the time comes.

PUTTING THE BBC IN BEAT-'EM-UP

Dear **RG,**
Thanks for the great beat-'em-ups article in issue 120. But no mention of the first ever beat-'em-up – Ian Bell's *Free Fall*, published by Acornsoft in 1983?
Chris Jordan (former Acornsoft publications editor)

Hi Chris, thanks for getting in touch. The article in issue 120 focused on one-on-one beat-'em-ups, therefore excluding the likes of *Double Dragon* and *Vigilante* as well as *Free Fall*. Rest assured that when we take those games on, *Free Fall* will get the recognition it deserves.



» [BBC Micro] It's more of a precursor to *Double Dragon*, but *Free Fall*'s one button per limb controls remind us of *Tekken*.

WE PREFER NEAPOLITAN

Hi Guys,
I am sure this has been pointed out many times since your last damn fine publication hit the shelves (and doormats for your subscribers), but the music chart you have listed for December 1996 is – SHOCK HORROR! – December 1990's.

Yes, I danced to *Ice, Ice Baby*, just as badly as the vanilla one himself. But I never bought it! Honest guv! You should include a column looking at other retro bits and bobs from the murky mists of pop culture. Thanks for reading.
Steve Coffey

You're not the only person to catch it, but yes – it was an error indeed. The real chart featured the likes of Toni Braxton's *Un-Break My Heart*, The Prodigy's *Breathe* and Boyzone's *A Different Beat*. As for non-gaming retro content, it's not something that fans of Retro Gamer seem to be clamouring for – the A-Z Of Retro that ran in the magazine's early days didn't last long at all.



STAR LETTER

REALITY BYTES

Dear **Retro Gamer,**
I'm a scared byte from the Amiga *Putty Squad* code, for 20 years forgotten in an uncomfortable 120-megabyte hard drive. Last December somebody woke me up and I'm writing this letter to you, for you are the only magazine where I can find consolation with your readers.

Different the world was, when oblivion fell upon me and a sleep of many years enveloped me. You, reader, didn't reply to emails with your smartphone, because there were no mobiles and after all you didn't own an email address. There was no web 2.0 because no-one was browsing the web! Gosh, what a huge amount of time has passed while I was sleeping! It is astonishing!

But, above all, many trips, lovers, friends and enemies have helped to dig the wrinkles on your face. I remembered you as an exuberant teenager, now you are a graduate and married father of two, with the work that perhaps you hoped for and a nice car in the garage. Too much time has passed: everyone grew up and I do not recognise anything. I'm scared.

Just a bit of solace remains for me: I see you are still a kid inside. You love me, a videogame, just like you did when you were younger!
Marco Buratto

Thanks for reminding us that we're all older now, *Putty Squad*. While that 20 years of sleep has seen the world change, you've missed some things that were well worth missing – the disappointment that accompanied *Rise Of The Robots* at launch, the travesty that was *Superman* on the N64 and the ridiculous saga of *Duke Nukem Forever*'s development. But if you're still feeling nostalgic, here's a prize to remind you of better days.



» [Amiga] The long-delayed arrival of *Putty Squad* worked Marco Buratto into a nostalgic frenzy.

Don't forget to follow us online for all the latest retro updates

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DISCUSSED THIS MONTH

Sneaking

The new *Thief* was an interesting flashpoint – Nick and Jon were spectators to a coffee break discussion of the stealth game's merits. Darran felt that the game made it too easy to just power through the guards but Steve actually played the game properly and enjoyed himself.



I LOVE NOT EXPLODING

Dear **RG**,

I have avidly bought your fine periodical since issue one, and have a request for a feature. Although I have a reasonably powerful laptop, and therefore access to a myriad of console emulators, I have decided that to be a true retro enthusiast I really should have the actual machines themselves (actual available space permitting).

It's going to be relatively easy to acquire systems that had a British release, but the Holy Grail as far as I'm concerned is having the capability to get consoles from other territories up and running here in Blighty. I'm aware that our American and Japanese friends use different voltages and, as I've always been a big fan of not blowing myself to smithereens, it would be brilliant to have some guidance on how to use step-down transformers (as I believe they're called) to safely install a foreign system. I'm particularly keen to get my hands on a PC Engine or its US counterpart the TurboGrafx-16.

It would be marvellous if you guys could produce a feature on this, because your articles are always well-researched and compulsively readable. You could even make the guide as a one-off supplement or something similar.

Paul Holden

Not blowing yourself to smithereens is one of life's great pleasures, isn't it? We're familiar with the use of step-down convertors and the issues that NTSC video can cause – particularly when it's delivered over humble RF cables, which is your only option with the original releases of the PC Engine and TurboGrafx-16. Readers, let us know if this kind of article is your cup of tea and we'll look into it for a future issue.



» You need the correct step-down convertor to power up consoles from other countries.

> **"a true retro enthusiast I really should have the actual machines themselves"**
>
> Paul Holden



From the forum

» www.retrogamer.net/forum

Every month, Retro Gamer asks a question on the forum and prints the best replies. This month we wanted to know…

Your Favourite Arcade Games



psj3809
Star Wars – as a kid the sit down arcade machine was just amazing. With all the sounds as well as a cool joystick you really felt you were flying an X-Wing.

Antiriad 2097
I'm going to pick a well-known game with a mysterious cabinet – *Green Beret*. I can picture where it stood in my old arcade, but I can't recall the cab artwork and neither can anyone else. None of the big archives online seem to have anything for it.

Bub&Bob
That one with the dragons, the platforms and bubbles… can't remember the name though!

ipmarks
Indiana Jones And The Temple Of Doom. Not because it's the best arcade game, but because it's the only arcade game I ever finished at the arcade.

Morkin
Space Invaders, as it was the only game that I played on my single visit to the arcades. Too many dodgy people hanging around.

joefish
Space Harrier – amazingly colourful (for the time) scaling graphics, lightning-fast action, great music and the heaving mechanical seat added up to the most intense arcade experience ever.

RodimusPrime
WWF Wrestlefest, brilliant caricatures of the wrestlers and it came out right when wrestling was at its best.

Bluce_Ree
You can't really beat *Bomb Jack*. It took whatever was good about *Pac-Man* and upped the action and excitement. Add to that the risk vs reward mechanic of going for the right bomb for more points and you've got a classic.

Megamixer
I'll go for something that just isn't the same when converted for the home and plump for *The House Of The Dead III*. The third game is quite boring on home consoles but in the arcades with the shotguns, it's fantastic.

fredghostmaster
Moon Cresta – it's a tough game but I loved the docking sections and the sound effects just take me back to my summer holiday in France '83, where I spent all my money on it to get my name on the leaderboard.

Confessor
I have fond memories of *Dragon Buster, Bosconian, Espial, Space Ace, Star Wars* and the motorbike ridin' laser game *Star Rider*.

retro GAMER

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ENDGAME



DEEP DUCK TROUBLE STARRING DONALD DUCK

» You'd be surprised just how often amphibious creatures get into trouble. After the previous Master System game, in which Magica De Spell stole Scrooge McDuck's lucky dime and kidnapped Huey, Dewey and Louie, you'd think that Disney's ducks would keep their heads down for a while. But that would be simple, wouldn't it? Now it's up to Donald to break a curse that has turned Scrooge into a balloon…



01

» Having returned the stolen pendant to the mysterious island, Donald Duck has broken the curse on his uncle Scrooge. Good work, Donald! Maybe you can put your feet up, or pop down to the local pond for some swimming.



02

» But wait! Donald utters those dreaded words – "look what I found". No, Donald. Please don't do this. Your family has suffered enough, they don't need any more ridiculous shenanigans. *You* don't need it. Please, Donald.



03

» We're already too late. Acting before he thinks, Donald proudly shows off the crown that appeared when he returned the pendant, proudly telling Scrooge that it isn't cursed. This, if you were wondering, is the origin of the insult "bird-brain".



04

» Scrooge knows the score, and decides to set Donald straight by informing him that it is obviously cursed. But considering that he's only just had a treasure-based curse lifted himself, it's clear that Scrooge's genre-savvy observation comes with just a slight hint of massive hypocrisy. You're better than that, Scrooge.



05

» Donald's bad idea leads to ridiculous consequences, as he's now a balloon. He's got nobody to blame but himself. But far worse is his uncle – in a shocking display of callousness, Scrooge treats Donald's mutation as a good thing. Donald really needn't have bothered rescuing him, if you ask us.


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"Across Age 2 is an awesome RPG experience"
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